

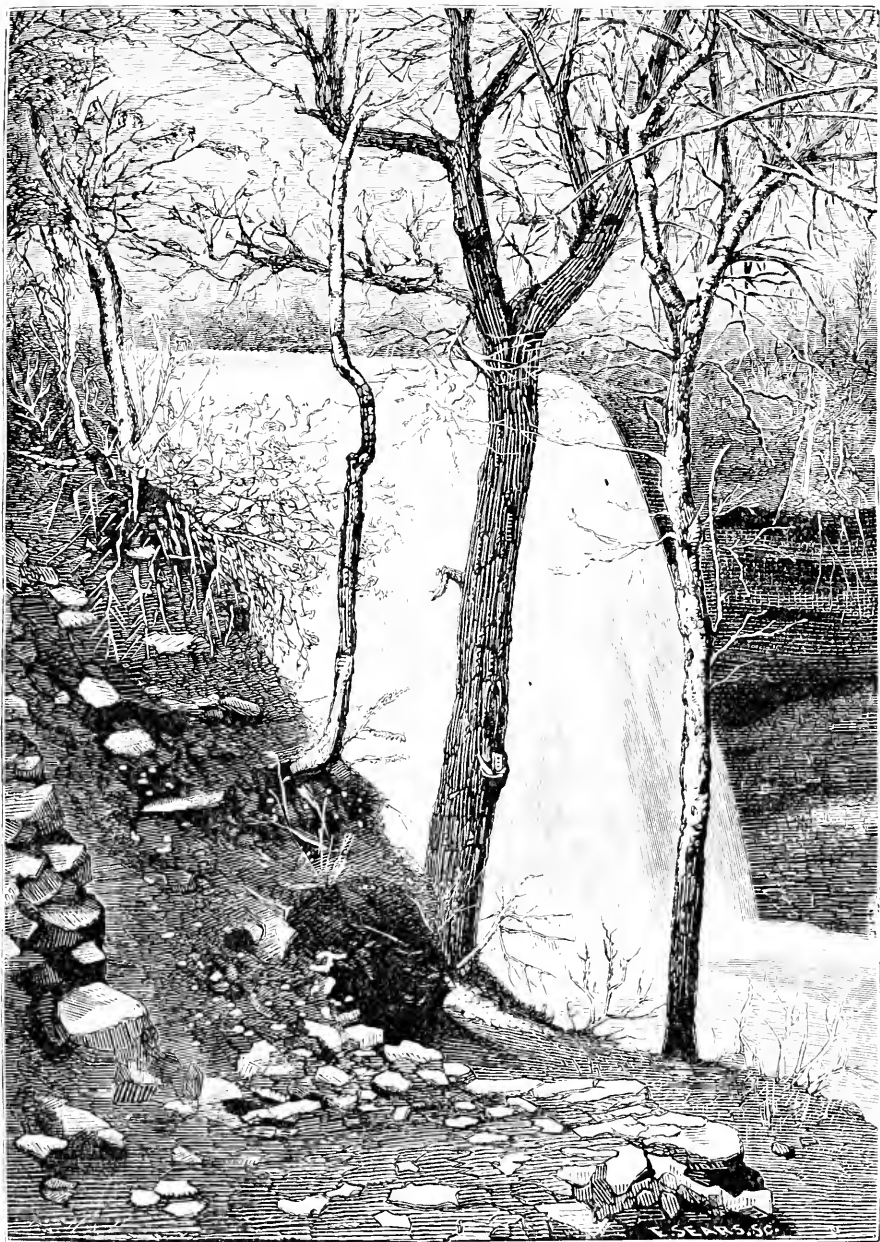


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MINNEHAHA, LAUGHING WATER.

MINNESOTA ;

ITS

CHARACTER AND CLIMATE.

LIKEWISE

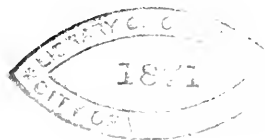
SKETCHES OF OTHER RESORTS FAVORABLE TO INVALIDS ;
TOGETHER WITH COPIOUS NOTES ON HEALTH ;

ALSO

HINTS TO TOURISTS AND EMIGRANTS.

BY LEDYARD BILL,

Author of "A Winter in Florida," etc., etc.



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TO

MY NIECES

THIS VOLUME OF SKETCHES

IS AFFECTIONATELY DEDICATED

BY THE AUTHOR

PREFACE.

By general consent Minnesota has enjoyed a superior reputation for climate, soil, and scenery beyond that of any other State in the Union, with, perhaps, a single exception.

The real ground of this pre-eminence, especially in climate, has not been well understood, owing, probably, in part, to the slight acquaintance with the general features and characteristics of the State itself, and, in part, to that want of attention which the subject of climatology and its effects on the health of mankind has deserved.

Lying to the north of the heretofore customary lines of travel, the State has been visited by few comparatively, except those whose immediate interests necessitated it, and even they have gleaned but an imperfect knowledge of either the climate or of the unusual beauty and interest which so distinguish Minnesota from all other Western States.

Instead of the low, level, treeless plain usually associated with one's ideas of the West, there is the high, rolling country, extending many miles back from the eastern frontier, while the general elevation of the State is upward of one thousand feet above the sea—abounding in pleasant and fertile valleys, large and valuable forests, together with many beautiful lakes, nearly all of which are filled with the purest of water and with great numbers of the finest fish.

While the attractions of Minnesota for the tourist and emigrant have been duly considered in these pages, those of the climate for the invalid have received especial consideration, and we have added such hints and suggestions as circumstances seemed to demand; together with observations on other localities and climates favorable to pulmonic complaints.

BROOKLYN, N. Y., 1871.

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MINNESOTA.

INTRODUCTORY CHAPTER.

LEADING CHARACTERISTICS OF THE STATE.

The water system of the State.—Its pure atmosphere.—Violations of hygienic laws.—A mixed population.—General features of the country.—Intelligence of the population.—The bountiful harvests.—Geographical advantages.

THE interest attaching to the State of Minnesota, as compared with other of the Western States, is two-fold. While all are well known for their great fertility and prosperity, Minnesota alone lays special claim to prominence in the superiority of her climate. How much this may be due to her peculiar geographical position is not wholly evident, but its influence must be great; and it is important to observe that the position of the State is central, being, in fact, the very heart of the continent.

It is likewise remarkable for the vast water systems which have their origin within its boundaries, and their outlet through three of the great interior valleys, namely, the Red River, northward

to Hudson's Bay; the St. Lawrence, eastward through the lakes; the Mississippi River, southward, and all having one grand terminus where, through the powerful agency of the great river of the ocean, the "Gulf Stream," their reunited waters are borne away to the tropics, again to be returned, in gentle rains, to this central and elevated plateau known as the State of Minnesota.

Since the first settlement of the State it has become gradually known as possessing an extremely salubrious climate. There was no scientific or official board of weatherwise people to proclaim the advantages of this young State, either in this or any other particular; but, by a continued succession of extremely favorable reports from the early settlers immigrating from adjoining districts, and from unhealthy and malarious localities in the older and more eastern States, her reputation steadily increased until the sanitary fame of this "far northwest" is now coextensive with its civil history.

The chief characteristics of a healthful climate are pure atmosphere and pure water. These are seldom found in conjunction, except in the temperate latitudes; though there are a few localities in the sub-tropical regions where these conditions may be found, such as Fayal, off the coast of Spain; the high altitudes of some of the Bahama and Philippine islands; also at San Diego in California; and likewise at St. Augustine, on the east coast of Flor-

ida. There are others which do not as readily occur to us at this writing. These two elements are always absolutely necessary to insure a good degree of health, but they do not secure it; quite far from it, as is well known, since the most careless observer must have noticed the varying sanitary degrees of localities in temperate latitudes, that are even contiguous to each other; the one, perhaps, being highly malarious, while the other is measurably healthful. And, again, great districts, occupying a half of a State, are so detrimental to sound health that half their population are whelmed with fevers—bilious, intermittent, and typhoid—from year's end to year's end. Such a locality is the valley of the Wabash River, in Indiana. In passing through that country, after a season of prolonged wet summer weather, we have seen more of the inhabitants prostrate from disease, incidental to the climate, than there were well ones to care for them.

It is seen that the selection of a home for ourselves and families is a matter of the very highest moment to all who desire to prolong life and enjoy the full possession of all their powers. Very trifling attention has been given this question, as a rule, since we see on all hands multitudes crowding into unhealthy precincts, to say nothing of those more pestilential-breeding apartments which are everywhere inhabited by the poorer class, as well as by thousands of the well-to-do and intelligent people

of both town and country. It is noteworthy, however, to observe the increasing interest manifested of late in all things pertaining to the laws of hygiene ; and yet the alphabet of the subject remains a profound mystery to the greater masses of men. Much praise should be awarded the daily press for its dissemination of valuable hints and arguments upon all the vital questions of health ; and, but for newspapers, indeed, there would be no practical means of reaching the millions who, more than all others, so much need to be taught these invaluable, first lessons of life.

The tide of emigration from the seaboard to the West has usually followed parallel lines ; so that we find the State of Texas settled, for the most part, by people from the States lying upon the Gulf, while in Missouri they hail largely from the Carolinas, and from what were once known as the border slave States. Going farther north, to Minnesota, a preponderance of the New England element is found ; though people from all the various States of the Union are encountered to a greater extent than in any of the others lying in the Northwest ; and this fact is important as one of the circumstantial evidences of the great repute this State bears, *par excellence*, in the matter of her climate. We cannot suppose that this minor and miscellaneous population were attracted hither from any special attachment either to the people or the institutions of the

commonwealth, but rather in quest of that health and vigor lost within their own warm, enervating, or miasmatic homes, which so abound in all the central and southern portions of the Union. Finding their healths measurably benefitted by a residence here, they have brought their families, engaged in their various callings, and may now be found settled permanently in their new homes throughout all the towns and villages of the State.

Minnesota is known as the New England of the West, this appellation growing out of the fact that the great preponderance of her citizens, as before stated, are either of New England birth or origin; and this well-merited *sobriquet* has, likewise, an additional application, since the general face of the country is diversified and quite in contrast with the endless stretch and roll of the shrubless prairies of some of the other great western and adjoining States.

The traveller has but to pass over the flat surface of the State of Illinois, and the nearly treeless country of Iowa, to duly appreciate the pleasing contrast which the State of Minnesota affords. While there is an utter absence of anything like mountain ranges (excepting upon the north shore of Lake Superior, where a belt of granite lifts itself above the surrounding woodlands), yet there is, everywhere, either a patch of timber, a valley bounded by gently receding country, or some gem of a lake

set in the more open rolling prairie—all adding beauty and endless variety to the generally picturesque landscape.

It might be entirely safe to assume that the people of Minnesota, as a whole, are distinguished by a more æsthetic character than their neighbors living in the nearly dead level country below them. It is but reasonable to suppose that some, at least, in seeking new homes, would give a preference to attractive localities, even at the sacrifice of something of fertility; which is, to some extent, the case; as the low flat lands of the rivers below are unrivalled in their power of production—whether it be of the grains of wheat or disease. It is well known that scores of those moving into the West seek only the rich level lands which are easily manipulated; requiring no application, during their natural lives, of any restorative. And, if it only be free from surface obstructions at the outset, they are content—asking no questions relating to the more important matters of life, such as concern the health, companionship, and education of either their families or themselves, and accounting all the influences of the surrounding prospect as of no value.

Perhaps the ratio of increase in population is not greater in Minnesota than in some of her adjoining sister States, notwithstanding her superior attractions of climate and scenery. Yet, if this be true, it is readily accounted for in that the majority of the

people moving westward do not readily consent to make their new homes north of the parallel of their old ones. On the contrary, the general tendency is to drop southward, desiring to escape as much as may be the protracted cold of winter; forgetting, or never knowing, that the isothermal lines have a general northwest direction as they cross the continent. Many, also, as before mentioned, who seek solely a fertile soil, or those who wish to engage in a purely pastoral life (where the open and unreclaimed country is so favorable), move, as a rule, to points south of a due west course; thus leaving the more northern latitudes to such only as have an eye for them on account of their varied attractions, and who are quite willing to exchange a few dollars of extra income for a few pounds of extra flesh, and who count health as first-rate capital stock and the full equivalent of any other kind which a settler can possess.

Notwithstanding this general tendency of things, we believe the net increase in both population and wealth, for the last decade, to be relatively as great in the State of Minnesota as in that of any other State in the Union; or, at least, far above the average in the aggregation of those things which make up their power and importance.

It would be a grave error, however, if the mind of the reader was left with the impression that this State was lacking in the fertility of her soil, and in those other elements so essential to the foundation,

true prosperity, and greatness, such as can only come from a well-ordered system of agriculture and from prolific fields. Far from this,—on the contrary, she is widely known at home and abroad as presenting as many inducements on the score of husbandry alone as any of the most highly favored of States. There doubtless is a percentage of advantage in richness of soil; but this is more than counter-balanced by the living springs and flowing streams that everywhere dot and cross her surface. Ask the farmer on the distant plains what consideration he would give for pure and abundant water as against soil. Her grasses are more tender and sweeter, and her beef better than is that of those localities which rival her in fertility. Go walk through the waving fields of golden grain in summer-time, spread almost endlessly up and down her beautiful valleys, and far out over the rolling prairies, and then answer if eye ever beheld better, or more of it, in the same space, anywhere this side of the Sierras.

Wheat is the great staple product of the West, and is the chief article of export. It is this, more than all things else, which puts the thousands of railway trains in motion, and spreads the white wings of commerce on all the lakes and oceans. This important grain is, in the valley of the Mississippi, nowhere so much at home as in this State. The superior quality of the berry, and the abundant and steady yield of her acres, long since settled the

question of her rank as a grain-producing State. The future has in store still greater triumphs in this same department for this young and noble commonwealth. She is at present in her veriest infancy, and, indeed, can scarcely be said to have taken the first step in that career which is so full of brilliant promise and grand capabilities.

Lest it be thought we have an overweening love for our subject, beyond its just deserts, let us add here that the State has, in its geographical position, most extraordinary advantages, which, at present, are little known and of little worth, but which the future must inevitably develop. The vast and fertile region lying to the northwest of Minnesota, drained and watered by the Red, Assiniboine, and Saskatchewan Rivers respectively, and well known to be capable of maintaining a dense population, must draw its supplies, and seek outlet for its products, always paying tribute at the gates of this commonwealth in both cases.

Then there is the great national enterprise known as the North Pacific Railroad, on which already the iron horse has commenced his race, and which is being rapidly and determinedly carried forward, giving augury of a successful and speedy conclusion. This road passes through the central zone of the State, and, with its briarian arms, must cumulate untold wealth and power, only to be emptied into this "lap of empire."

CHAPTER II.

THE UPPER MISSISSIPPI.

The source of the river.—The importance of rivers to governments as well as commerce.—Their binding force among peoples.—The rapids at Keokuk.—Railroad and steamboat travelling contrasted.—Points at which travellers may take steamers.—Characteristics of Western steamboats.—Pleasuring on the Upper Mississippi.—The scenery and its attractions.

THE great central watershed of the continent is found within the boundaries of the State of Minnesota, and the rains precipitated on this elevated plateau move off in opposite directions, becoming the sources of some of the principal rivers of this vast interior basin, with their waters flowing both to the Arctic and Equatorial Seas.

The chief of these is that of the "Father of Waters," rising in Lake Itaska, and emptying in the Mexican Gulf, separated by a distance of more than two thousand miles, washing in its course the shores of nine States, all embraced by this, the most fertile and important valley known to mankind. As an aid to civilization and to commerce, its value can never be fully estimated or completely comprehended.

Rivers are frequently important, in connection

with mountain ranges, as supplying natural boundaries for governments and peoples who dwell on either side ; but, they likewise perform the more important office of binding with indissoluble bonds communities living along their banks and tributaries, from origin to outlet, making their interests common and population kin.

The European Carlyles and believers in the divine rights of kings have, in view of the influx of discordant races and the jarring elements within, together with the cumbrous machinery of our government, prophesied that disintegration and ruin would ere long be ours. But they took no note of the harmony and fraternal feeling that must come between peoples so differing, when all have equal share in a government founded in justice, and on the broad principles of human right ; and, last but not least, the important influence of those commercial relations which we sustain to each other, growing out of the general configuration and accessibility of the country occupied and governed.

The Mississippi River is the natural outlet and grand highway to the Northwest, and contributed everything toward its early settlement ; so that a sketch of it seems indispensable in connection with that of the State in which it has its rise, and with which its chief interest and history are intertwined.

It is practically divided into two sections, that below Keokuk being known as the *Lower*, and that

above (the part of which we now propose to consider) as the

UPPER MISSISSIPPI.

This designation comes from having well-defined boundaries, in consequence of a ledge of rocks lying across the river immediately above the city of Keokuk, which, during the lower stages of water, wholly prevents the passage of the larger class of steamers plying on the river below.

From this point, there are about six hundred miles in one continuous stretch of navigation, up to the city of St. Paul. On this upper river a smaller class of steamers are usually employed; though, at good stages of water, the larger boats are abundant; and, indeed, one of the most important lines in the upper river, the Northwestern Union Packet Company, employs five large steamers, which run between St. Louis and St. Paul, except in the very dry seasons. The small steamers, so called, are really large and commodious; but so constructed—as are in fact all of the steamers plying on our western rivers—that they draw but little water, being large and nearly flat-bottomed, sitting on the surface like a duck, and moving along, when lightly loaded, with apparent ease and at a comparatively high rate of speed.

It is always a pleasing reflection to the tourist, and a comforting one to the invalid, to know that at least a portion of their journey may be performed on board of a well-kept and convenient steamship.

They contrast so favorably with the dusty train, that we wonder the latter are half as well patronized as they are, when the two means of conveyance are running on parallel lines. But then we know very well that the man of business and people in haste do that which saves most time, regardless entirely of themselves, and more frequently of their neighbors, who have, in consequence of open windows, taken a thousand colds, and suffered pains, neuralgic and rheumatic, sufficient to have atoned for the sins of a world of such as these—their inconsiderate fellow-travellers. Then the quantity of dust and smoke and cinders to be swallowed and endured, the damage to eyes of those who would beguile the mind into that forgetfulness of self; so painfully reminded of both the strait-jacket and the old-time, cruel stocks. Then the utter obliviousness to all hygienic law in the packing of a score or more of people, like so many herrings in a box, into sleeping cars, over-heated and worse ventilated, and not—if measured by the rules of any common sense—more than sufficient for a fourth of the number occupying. How often have we risen in the morning, after spending the night in this manner, with a feeling akin to that which we fancy would come from being knocked in the head with a sack of meal, then gently stewed, and all out of pure fraternal regard to supply any deficiencies in our original bakings. The operation is certainly quite neat, and entirely successful, since all who have tried it are

left in no sort of doubt as to their having been, at least once, thoroughly cooked. Perhaps a philosophical view is best, and all feel grateful for the double service rendered, while the charge for transportation only is incurred.

This is, however, too serious a business for much of jesting, as thousands are made to feel who have had occasion to travel much; and who is there of this restless, moving population of ours that does not, either on business or pleasure, make, sooner or later, extensive journeys? We are not unmindful of the many and important improvements made in the construction of railway carriages within the last decade, greatly tending to the conservation of both the health and comfort of the passenger; but there is still a good chance for inventors to attain both fame and fortune, if only the dust and cinders be kept out and fresh air kept in, without hazarding the health of any one by exposure to its draughts.

These drawbacks to health and comfort in travelling are measurably avoided when journeying in or to the Northwest during the season of navigation. The Ohio River furnishes such an escape to the invalid seeking this region from the central belt of States; and the great lakes supply a more northern range of country; while less than a half day's ride from Chicago places one at either Dubuque, Prairie du Chien, or La Crosse, where daily boats may be had for St. Paul or any of the towns intermediate.

These steamers differ widely from those in use on any of the rivers in the Eastern States, and while not as substantial, seem better adapted to the trade and travel on these interior rivers. Beyond occasional violent winds there is nothing in the elements for them to encounter, and hence they are built low to the water, of shallow draft, and an entire absence of all closed bulwarks used to keep out the sea by those plying in stormy waters. These western river boats would scarce survive a single passage on any large body of water, yet, for all the purposes for which they are required here, they seem admirably fitted.

In making the journey from Dubuque to St. Paul and return, one of these steamers—and yet not of the largest class—requires a supply of five hundred bushels of coal, and full one hundred and twenty-five cords of wood, to keep its devouring furnaces ablaze and its wheels in motion. The round trip between these two points is made, including the landings, in about three days. The *up*-trip is performed with as great speed as that is down, owing to the greater economy of time in making the landings. In going up these are easily made, with bows on shore (they have no wharves); in coming down stream the ship is compelled, for her own safety, to turn in the river before reaching the landing, and then run “bows on,” the same as when going up, else, if this was not done, the current of the river, which

is often quite powerful, might drive the vessel too high on the shore, or wheel it around to its damage. This evolution requires a few minutes for its performance at each landing, and thus the whole time is about equally divided in the going and returning.

The average dimensions of the class of steamers employed in this trade may be said to be about two hundred and forty feet in length and thirty-five in breadth, drawing from two to four feet of water, with accommodations for about one hundred and fifty cabin and as many more second-class passengers.

The first deck is wholly devoted to the machinery and freight; and all is exposed to view from every side. The great furnaces occupy the centre of this deck, and their lungs of fire roar and breathe flames eagerly and dangerously out, like a serpent's forked, flashing tongue. The sides glow and swell from the increasing heat, and the iron arms of the machinery tremble and quake with the pent-up and rapidly accumulating forces, running unseen to and fro, only too ready to lend a helping hand—at anything. The seat of power in all this is, like the seat of power everywhere, hot and revolutionary, and those who occupy it must be vigilant, as only one head can control, though that is not unfrequently, on these western waters, the Cylinder head.

The fuel is in front and along, next the furnaces;

while the freight is stacked on the bows and along the sides and aft, which is likewise the place where the ship's crew sleep, in bunks ranged on either hand above each other, like shelves, sheltering the sleeper only from the rains. The live stock is usually crowded into close quarters on the after and outlying guards, having a high railing and strong supports. By a staircase from the main deck in front the grand saloon is reached. This is the interesting feature of all these large river steamers. Fancy a saloon one hundred and fifty feet in length, richly carpeted and upholstered, having large pendant chandeliers, glittering with all the known prismatic colors, the whole overarched by fancy scroll-work in pleasing combination with the supports to the ceiling and floor above ; and, as is frequently the case, all being highly ornate, makes a fancy scene not unworthy of association with the famous palace of Aladdin, as given us in the charming stories of the *Arabian Nights*.

This, with some slight exaggerations in style, perhaps, is the home of the traveller while journeying on this upper and most interesting portion of the entire river.

At night, with the saloon and ship all lighted, the scene is both inspiring and brilliant. Above the roll of the machinery and noise of the dashing waters comes the grateful melody of happy voices, lulling the tired traveller to repose and chasing

away from other faces all recollection of painful responsibilities and cares.

A sail on this upper river is a beautiful one, and all who can should make it. The scenery is not as varied or striking as is that of the Hudson, of which one is constantly reminded; but it is nevertheless attractive and quite peculiar. The banks of the Lower Mississippi have risen here to high towering bluffs, giving a highly picturesque character to the landscape. This is the region of the lower magnesian limestone; and as it builds up these bluffs and crops out along their sides and at the tops, worn by the winds and rains of centuries—these rock exposures, gray and moss covered, have rounded into striking resemblances of old ruins, as if buried by convulsions in some unknown age, the homes of some possible race of Montezumas, of which these are the only monuments and records.

They often rise to the height of four and sometimes five hundred feet above the river, standing singly or in groups, and again stretch for long distances like the Palisades of the Hudson, differing from them in that they are not as abrupt and have their sides covered with the most luxuriant sward.

Those who can should climb to the summit of one of these cliffs and get a glimpse of as lovely a picture as it is possible to find in a journey round the world. The winding river, dotted all over with islands and fringed along its shores with forest-trees, expand-

ing now into some miniature lake, then lost and broken by some intervening bluff, to the right or left of which stretches the distant prairie; the whole forming a panoramic view unrivalled in interest and beauty by any we have ever seen elsewhere.

It is impossible for us adequately to describe to the reader these varying scenes of beauty in the landscapes which present themselves as we sail. They should come and see for themselves, and bask in the pure, bracing atmosphere, and the genial sunshine of these bluest of blue skies.

CHAPTER III.

RIVER TOWNS.

Brownsville, the first town.—The city of La Crosse.—Victoria and Albert Bluffs.—Trempeleau and Mountain Island.—The city of Winona.—Its name and origin.—The Winona and St. Peters Railroad.—The Air-Line Railroad.—Her educational interests.—Advancement of the West.—The towns of Wabasha and Reed's Landing.—Lake Pepin and Maiden's Rock.—Romantic story.—An old fort.—Lake City and Frontenac.—Red Wing and Hastings.—Red Rock.

THE first landing in Minnesota, going up the river, is made at

BROWNSVILLE,

a very small village, nestled close in under the hillside, and overshadowed by the high bluffs which seem to threaten its existence, and would quite exterminate it should land-slides ever become possible with these silicious limestone battlements. Beyond being an outlet for surplus products of the back country, it has no importance and no attractions. The traveller is now one hundred and thirty miles above Dubuque, one of the points of embarkation for those from the East who visit the State by the way of the river. If the sail is made by daylight

between these places, most suggestive impressions are made on the mind of the immense area of Iowa; for, while constantly expecting soon to catch a glimpse of "Dakota Land," you are all day baffled by the presence of this intervening State, which, somehow, seems determined to travel with you up the river, and, by its many attractions, woo you to residence and rest.

The fertile fields of Wisconsin, on the other hand, do not seem at all obtrusive, since you expect them on your right soon after leaving Dunleith; and, when the city of

LA CROSSE

comes in view, its bright aspect of industrial life, its busy streets, spacious warehouses, fine shops, and thronging commerce, challenge our love of the good and beautiful in civilized life. Indeed, this handsome and prosperous city is one of the most pleasant and interesting places which attract the traveler's attention along the two thousand miles of this navigable river.

Many, in coming to the "Northwest" by the way of Chicago, travel as far as La Crosse by rail, where abundant opportunities are had for steam transportation to St. Paul, and all intervening towns.

The islands have now so multiplied that here, and for some distance above, the river seems more an archipelago than anything else. Islands of all sizes and shapes, wooded and embowered with a

great variety of shrubs and vines, so that in spring-time they seem like emeralds set in this "flashing silver sea;" and when summer is ended, and the frost-king has come, they are robed in royal splendor—in crimson and purple and gold—seeming to be the fanciful and marvellous homes of strangest fairies, who, during this season of enchantment hold, it is said, at midnight, high carnival on the islands of this upper and beautiful river. Be that as it may, they certainly add to the attractions of a sail along this "Father of Waters," and give picturesqueness to the landscape which, before seeing, we had not credited with so much of interest and beauty as we found it to possess.

A couple of hours' additional steaming brings us to the lofty peaks standing on the left of the river, one of which, from the resemblance of its crest to the crown of England, has given rise to the names of Victoria and Albert. They are over five hundred feet in height, and believed to be the tallest of any of the cliffs along the river. Beyond, on the right, stands boldly the lone sentinel of Mountain Island, at the base of which is the small village of Trempeleau, where a moment's halt is made, and the wheels of the great ship splash through the water again, all tremulous with nervous energy and pent-up power as they bend slowly to their slavish labor; and, the only labor that man has any right to make a slave of is that with iron arms and me-

tallic lungs. He may compel these to work and groan and sweat at every pore with honor to himself and the added respect of all mankind.

A few miles further and the city of

WINONA

is in view. This is the most populous town in the State of Minnesota south of St. Paul. It occupies a low, level tract projecting from the base of the bluffs, which circle its rear in the shape of an ox-bow, and, in times of high water, becomes an island, owing to its great depression at its junction with the bluffs. The town stands on the front of this low plateau, along the channel of the river, and has a population of nine thousand people, counting the nomadic lumbermen, who live half the year in the piny woods many hundred miles to the north, and the other half are floating on the rafts down the river; a rough but useful people, who betimes will lose their heads and winter's wages in a single drunken fray, which they seem to consider the highest pleasure vouchsafed to them each season as they return to the walks of civilized life.

The pleasant sounding name of Winona is one of the many Dakota words abounding along the river and over the State, and was the appellation of the beautiful Indian girl who so tragically ended her life by leaping from the top of Maiden's Bluff, bordering the eastern shore of Lake Pepin above, and of which we shall presently speak more in detail.

It is a name always given by the Dakotas to the first-born female child of a family. As was the maiden, celebrated in song and story, so is the town, quite handsome and interesting in many points of aspect. It is the objective point for great quantities of freight by boat up the river, to be from thence distributed through the whole southern section of Minnesota by means of the important railway line extending from this city to the interior, tapping the St. Paul and Milwaukee road at Owatanna, and the St. Paul and Sioux City at St. Peter's and Mankato; draining one of the most fertile districts in the commonwealth of its immense stores of wheat and other grains seeking an outlet and an eastern market. This road is known as the Winona and St. Peter's, and is a trunk line, with the sure promise of increasing importance to the State and profit to its projectors. By means of it the great lumber marts of Minneapolis and St. Anthony, and likewise the Capital, are brought in close proximity to this commercial city of Winona; and much of the trade and travel of the fertile valley of the Minnesota River must, by means of this line, prove tributary to the rapid growing town.

The march of progress is never ended in the life of the West; and, ere the present year passes, an entirely new line both north and east will have been completed, and then a new era of prosperity will be inaugurated. We refer to the St. Paul and Chicago Air-Line Railway, which, starting at St. Paul, follows

the river banks to this place, where it is to cross to Wisconsin, thence direct to Chicago, leaving La Crosse forty miles below, and out of the line. Heretofore the means of travel to Chicago and the east has been either by rail to Owatanna, far to the west, or the more common practice of going by steamer in summer and stage in winter to La Crosse, thus of necessity paying both compliments and costs to this rival town, which has not been highly relished by the Winonians. The new route will make them entirely independent of the denizens of La Crosse. But both places have resources peculiar to themselves and quite sufficient to insure prosperity and fame.

Those visiting Winona are impressed with the general neatness of the place, and the number and finish of its business blocks and private residences. There are many fine churches erected, whose capacity, though large, is not much greater than seems demanded by the church-going inhabitants, which affords both a commentary and index to their general high character. Among the public buildings worthy of special attention is that of their Normal school, recently finished at a cost of over one hundred thousand dollars, being a model of elegance and convenience. This is a State institution, free to pupils of a certain class, and is one of three—all of the same character—erected under the patronage of the State, and for the location of which towns

were invited to compete. Winona secured this, Mankato another, and St. Cloud the third, all noble buildings, as we can personally testify, and which give to the people of this State opportunities such as those of the older commonwealths were utterly destitute, and are still, so far as scope, scale, and affluence are concerned. Then there is the city school, costing over half a hundred thousand dollars, and likewise highly ornamental, as well as useful.

New England long boasted of her superiority in the rank of her schools; especially was this the case in Connecticut, where a school fund existed, reducing somewhat the expense attending their maintenance; but they used no part of this fund toward the building of school-houses, and it is a question if it has not had there an opposite effect of what originally it was intended to accomplish. The same old shabby school-houses, fifteen by twenty, still do duty, and the district committee annually figure with the many youthful candidates for teachers—who, it used to be said, came there on a horse—to make the per-head allowance of the school fund, with boarding around thrown in, pay for their three months' services. Had the people understood they must hand out the whole school expenses, and seen personally to the education of their children, they would have had a livelier interest in the whole business; and this, with compelled liberality, would

have paved the way for greater expenditure and effort. Neighborhood rivalries of suitable buildings would have followed, and, instead of incompetent teachers being the rule, they would have been the exception, and those of us whose fortune it has been to be born in New England would not now be such "jacks of all trades and masters of none" as we are. The West deserves great commendation for their lively interest in all that relates to the education of the young. Why, almost any of these States excel those of New England in school matters, outside of two or three of the great universities which they happen to possess. Several years ago, in passing through Indiana and visiting several of the village schools, we were surprised and astonished at the superior class of text-books that were in use, and the improved methods of teaching in practice; and, likewise, the prompt and intelligent manner of the scholar in his exercises and examples, as compared with similar schools at the East; all a proof of the superior methods and facilities in vogue.

The new States have had it in their power to do what most of the older ones had not, and after all they cannot claim all the credit of their advancement in these matters, for the general government shares part of the honor in this wise provision for the education of the people, having donated one section of land in every township in some of the newer States. This was the case in Minnesota. These lands are to be

used in establishing a school fund, and this has already amounted to a large sum—two million five hundred thousand dollars ; and these normal school buildings are an evidence alike of the wisdom of the measure and magnitude of this fund.

The site of the town—while ample for a large city, having an area of several miles in extent—seems rather too low to insure that dryness essential to good health, though we believe its general sanitary reputation is as good as any of the towns along the river, and this is more than could be expected, since its general elevation scarce exceeds a dozen feet above the river when at a fair stage of water. Its levee accommodations are extensive and excellent, and the place must always remain the most important in southern Minnesota.

Passing several minor towns and landings, along the river, we next come to

WABASHA,

a village of about fifteen hundred inhabitants, with the prettiest location of any that we have yet seen. It stands on an elevated table, about forty feet above the river, and invites the tourist and invalid, by its pleasant quietness, to tarry and inspect the place. The hospitable-looking hotel, with its ample lawn and grounds close by the banks of the river, give promise of abundant rest and recreation.

The grain interest is the all-absorbing one at this point, as it is everywhere along the river.

A short distance above, and

REED'S LANDING

appears. This town is at the foot of Lake Pepin, and likewise at the foot of a huge bluff. This place becomes in spring the terminus of the steamers which are prevented from proceeding farther in consequence of the heavier ice of the lake remaining an obstruction to commerce for a period of ten days or two weeks longer than that in the river proper.

LAKE PEPIN

is nearly thirty miles in length, with an average width of about three miles, presenting an unbroken sheet of water; bounded on both its sides by tall perpendicular bluffs, with here and there isolated peaks towering far above their companions, having something of the dignity of mountain ranges.

This lake is famed for its great attractions of natural beauty, and is not disappointing to the traveller. It is a singular body of water, and while it is a part of the river still it differs from it in so many aspects that it is fairly entitled to be termed a lake. Below, the river is divided into numerous and devious channels by intervening islands of an irregular and picturesque character, uniting to give a grand, kaleidoscopic variety to the journey; but here, at Lake Pepin, the waters have free scope, and rise and swell under the pressure of storms sufficient to move and sway the heaviest fleets. The water is remarkably clear and cold, and is said to be over a thousand

feet in depth at some points. It is a tradition among the Indians that the bed of the river, with its islands, sank during a great storm, in which the earth trembled and shook for many leagues around. This seems quite possible, and the general formation of the lake indicates that their tradition is founded on actual fact.

The chief point of interest attaching to this locality is that known as the Maiden's Rock, a perpendicular cliff midway of the lake on the eastern shore. Were there no legend connected with it, the eye would be arrested by its lofty and impressive form, as it stands alone frowning on the dark, deep waters of the lake below.

Chief Wapashaw, whose village once occupied the site of the present city of Winona, had a daughter, *Weenonah*, the beauty and pride of all his tribe. This fair maiden had been thwarted in her affections by powerful and cruel hands, and rather than submit to unite her young life with one, other than he whom she so fondly loved, resolved to sacrifice herself. A fishing party, of which she was a member, proceeded to this lake, and while resting on the eastern shore she fled away, and to the top of this high eminence, where, discovering herself to the company below, she recited the story of her broken heart and undying love for him whose name she had been even forbade to speak, and, closing by chanting a wild death-song, flung herself down the sides of this terrible precipice,

and was dashed in pieces. Her father and friends, guessing her intent, on being hailed by her from the top of this rock, dispatched, as the story goes, their fleetest of foot to her rescue, but unavailingly. No Indian passes by this place of tragedy without uttering mournful wails in memory of their beautiful and loved Weenonah.

Along the base of these cliffs are numerous caverns, once the abode of wild beasts, and, even as late as Carver's visit, in 1766, numbers of bears were found wintering in them, and in the minor caves numberless rattlesnakes were seen by him. In his explorations in this immediate neighborhood he discovered, on the edge of the prairie, the outlines of an old fortification, which was distinctly traceable, and extended for nearly a mile, in its sweep enveloping an area ample for five thousand men. Its form was semi-circular, with the flanks resting on the river. The whole appearance was as if it had been built full a century before his visit, and while the ditch was indistinguishable, its angles were, and "displayed as much of science as if built by a pupil of Vauban himself." What race could have originally constructed it is a mystery, certainly not any of the known tribes inhabiting this country. Carver could not have misjudged the character of these intrenchments, since he had himself received a military education, and was therefore, of all explorers, not likely to be misled in his estimate.

The pleasure seeker will find it convenient to visit any portion of Lake Pepin from any of the villages along its shores. From Lake City a steamer usually plies to all interesting points, up and down the lake. Those wishing to halt in a locality of rare beauty and refined society, will choose FRONTENAC above.

Half a dozen miles above the north end of the lake comes

RED WING,

named after one of the great Dakota chiefs. It is attractively situated on the esplanade adjoining the famous Barnes' Bluff, with an amphitheatre of hills in the rear completely sheltering and hedging the place from view as it is approached from the south. The bluff is between four and five hundred feet in height, and on its summit lies buried the remains of the great chief, Red Wing.

The place has an increased importance, now that the "Air-Line" railway between St. Paul and Chicago passes through, giving speedy and constant communication to those cities all the year round.

On reaching the mouth of the St. Croix, thirty miles above, both banks of the Mississippi belong to Minnesota; the former watercourse filling out the eastern boundary of the State.

THE ST. CROIX RIVER

is an important tributary to the Upper Mississippi, and penetrates one of the great pine districts of the

northwest. The principal business done on this stream is lumbering, which gives employment to many hundreds of people, and amounts in the aggregate to many thousands of dollars annually. Navigation extends to Taylor's Falls, some sixty-five miles from its mouth.

There is a regular line of steamers plying between St. Paul and the head of navigation, making daily trips, and doing a prosperous business. They are, however, quite small and apparently inadequate to the increasing trade.

The most important of all the towns on the St. Croix is

STILLWATER,

with a population of several thousand souls. The chief object of interest, statewise, is the penitentiary, which we did not care particularly to examine. The city can boast, however, of a noble school edifice, and county court-house, either of which would adorn any place in the country.

There is at present no rail connection with St. Paul, though this want is soon to be supplied, and when completed it is expected to extend the line toward the railway system of Wisconsin and the East.

The St. Croix is famed among tourists for its beautiful scenery and attractive falls at the head of navigation. Pleasure parties make frequent excursions from St. Paul, and the trip is truly enjoyable if

you are always sure of so urbane and obliging an officer as is Captain William Kent.

Just above the junction of these two rivers is the town of

HASTINGS,

one of the great wheat marts of the northwest. It has several thousand inhabitants, the foreign element preponderating, we should judge. There are no specially interesting features either in or about the immediate neighborhood, if we except the Vermilion Falls.

The only remaining object worthy of attention, aside from the scenery of the river, between this town and the city of St. Paul, is

RED ROCK

camping-ground, situated on the east shore, on a level stretch of land six feet above the river at high water. This tract is quite extensive, and for the most part free of any timber beyond a grove or two, all of which is now owned by the Methodist Association, and occupied by them annually as a camp-ground.

This same ground was formerly used by the Indians as a camp-ground on the assembling of the various tribes of the Dakotas in general council, or on grand holidays, celebrated by all the various national bands. It derives its name from a rock, which is about six feet in diameter and nearly round, lying a few rods only from the river and in plain sight as the steamer passes. This rock was myste-

riously striped with red paint every year by the Indians, and was known by them as the Red Rock. Long after the occupation of the country by the whites, the custom of painting it was regularly kept up while any of the race remained, and it still bears marks of their work. No one ever saw them paint it, and it is believed the work was secretly done at night. It was held sacred by them as the abode of some good spirit, and received a certain homage, such as these superstitious, polytheistic people were accustomed to render their gods.

CHAPTER IV.

ST. PAUL.

As seen from the deck of the steamer.—The pleasant surprise it gives the visitor.—Impressions regarding new places.—The beauties of the city.—The limestone caves.—Père Louis Hennepin.—The population of St. Paul.—Its public buildings and works.—A park wanted.—The geological structure of the country.—St. Paul, the Capital city.—Its railroad connections.—The head of navigation.—Impressions.

Our first visit to the Apostolic city was on the morning of one of those golden days in early autumn, any one of which might have inspired Longfellow's little poem, "A Day of Sunshine," they were so perfect.

The goodly ship on which we came was rounding a tract of low meadow-land, skirted by some forest growths, when suddenly the streaming sunlight was flashed back to us from the spires of the city of St. Paul itself, sitting like a queenly crown at the head of this noblest of all rivers.

All were surprised and delighted to find that, in the matter of its location and general appearance, it so far exceeded what our fancies had painted it. No correct idea had been conveyed by any repre-

sentation of it that we had ever seen, nor had any sketch sufficiently outlined it for the imagination to fill up ; yet we were prepared to see a *pretty* city, though not looking for a *grand* one. The view from the deck of the steamer, as the traveller approaches the place, is one of the best. The river makes an abrupt turn to the westward, in front of the city, which is situated on the northern side of this elbow, immediately at the turn, with its face full southward down the river. It would, after all, fail to be as imposing as it is but for its location, which is greatly elevated above the river, rising from it in irregular grades, with intervening tables, back fully a mile to the summit of the high bluffs forming the rear of the city.

The common impression in relation to all towns in the new States, and with reason, too, is, that they are of such rapid growth, under speculative influences, as to often possess no solid elements of prosperity, and that, after the first wave of excitement dies out, they collapse ; but if they have real advantages of position and enterprise combined, the prize is as surely theirs. The critical period for St. Paul has passed, like that in the life of its great namesake, and the visitor, as he walks along the streets of the town, finds evidences of its substantial and permanent growth on every hand.

Probably no place of the same population in the entire valley, from New Orleans up, can boast of as

many substantial and costly stores, or as many elegant and tasteful houses, as can St. Paul. The fine prospect to be had from every portion of the town is likewise a noted feature peculiar to itself, and is what neither wealth nor art can create. Back, on the edge of the bluff, which surrounds the city in a semi-circular form, runs Summit Avenue, already a fashionable quarter, but which, ere long, must be famed as commanding one of the most interesting landscapes in a country abounding in many natural beauties.

From Dayton's Bluff, on the left, likewise an attractive point in itself, the best view of the city can be had. Under this bluff is a cave, which was used as the council-chamber of the red men, and has been the witness of many a notable event. It is a subterraneous cavern formed by the running water wearing away the soft, white, calcareous sand, which, everywhere in this section, underlies the strata of blue limestone next to the surface. There are several of these caves near the town, but of no great interest beyond serving to while away an idle hour, or to give some additional zest to a morning's ramble.

St. Paul received its name from Père Louis Hennepin, a European, belonging to the Order of Franciscans, who landed on the present site of the city while on a voyage of exploration and discovery up the Mississippi River, in April, 1680. He was an

extensive traveller and prolific writer; but of all things done by him, that of giving the name of the famous Apostle to this locality, and now city, was by far the best. The next hundred and fifty years passed by and still all a blank, and not till 1850, the year following the territorial organization of Minnesota, can it be said to have assumed the appearance of a permanent settlement, with a population of perhaps a thousand adventurous souls.

The present enumeration of St. Paul, as given by the census of 1870, just completed, shows a trifle over twenty thousand. This is not as high a figure as the people had hoped for and counted upon; but yet this shows an increase of about seventy-five per cent. for the last five years. No one can walk the city and not believe that this recent and rapid growth has substantial foundation in the enlarging business and increasing importance of the town itself.

The public buildings and works of the city are worthy of note in any sketch; and we would first call attention to the Capitol, which stands obscured from the river, and back of the centre of business, on the table between the front and rear bluffs. It is a plain structure of brick, in the form of a cross, with wings of equal length. This must eventually give room to a more suitable and dignified structure, yet for all present needs, and during the infancy of the State, it is not at all inappropriate.

The most costly building, when finished, will be the Custom-House of the General Government. It is being built of granite, brought from St. Cloud, and is estimated to cost the handsome sum of three hundred thousand dollars.

The interests of education are well looked after in the half-dozen public school buildings; and the religious element has abundant spiritual food dispensed from the full score of costly and well-ordered church edifices, some of which contribute much to the architectural grace and ornament of the town.

A notable feature in the landscape, as the city is approached by either railroad or river, is the wooden bridge spanning the river just at the steamboat landing. It is over a fourth of a mile in length, and built upon an *inclined plane*, at a cost of one hundred and fifty thousand dollars. The first abutment on the side of the city starts on a level with the bluff, giving seventy-five feet between the bridge and the river, and then falls rapidly away, supported by nine stone piers, to the low flat land on the opposite shore. This is used as a carriage road, and connects St. Paul with all the adjacent country on the opposite side of the river. A half-mile beyond this bridge, the companion bluff to that on which the city stands begins, rising to an equal height with it. These bluffs, however, it should be stated, are not of such imposing appearance as are those on the river below, and concerning which we have

written in a preceding chapter. They seem to gradually lessen in height from four and five hundred feet at Lake Pepin, where the greatest altitude occurs, to about one-third of that here at St. Paul.

The city's supply of water is fine, and at all times abundant; a lake back of the town being the natural reservoir of this supply. What has been to many towns a great labor and burden, has here required but a trifling expense.

Hotels are usually the traveller's thermometer by which he judges the culture, beauty, and general characteristics of the town. It is quite singular that people remember a town either with delight or disgust, just in proportion as the entertainment furnished at their hotel is good or bad, but there is more of truth in this than any of us would care at first to acknowledge. The good people of St. Paul have, however, nothing to fear in this respect. There are several fine establishments, chief of which is the "Metropolitan," and then the "Park Place," with its cool and ample verandahs, inviting travellers to repose and rest.

The question of a Public Park is being agitated, and with every hope that it will be carried to successful results. But little attention has been given this matter by any of our cities until a very recent period; and now their beauty and utility having been established, many towns are moving in this most important matter. St. Paul can afford to issue

bonds liberally to this end ; and should the district under consideration be secured, including the beautiful Lake Como, little elaboration will suffice to make it immediately a notable feature of the town.

The strata of blue limestone near the surface, and on which the city practically stands, is of great value, and quarries can be opened anywhere, from which good building material in unlimited quantities can be had at small cost ; easily competing with lumber in the market, which is likewise plentiful, as we shall see when we come to look into the history and growth of the sister city on the river, above.

This stone already constitutes the chief material used in the erection of all the better class of buildings in the city, and, indeed, Third Street, the principal business thoroughfare, has even now little else than this honest and solid-looking material to represent it.

The sandstone underlying the magnesian limestone, and which is so soft as to be easily crushed, could be used we judge in the manufacture of glass-ware at great profit to the manufacturer ; but as yet, there is nothing done that we know, and it is not strange when we reflect that it is but a score of years since St. Paul was really occupied and settled. All of this various strata of rock and sand belongs, geologically speaking, to what is known as the lower silurian system, extending from near the western shores of Lake Michigan, and sweeping

over all the lower half of Minnesota, westward and upward along the valley of the great Red and Assiniboine Rivers to the north, marking one of the most prolific grain growing belts on the continent, if not in the world. While this limestone underlying the surface is valuable for the purposes heretofore named, it performs a still greater service to mankind in having contributed much of those qualities which have given in certain departments of agriculture, highest prominence to the State.

St. Paul is both the political and commercial capital of Minnesota, and must always remain such without doubt, though it does not occupy a central geographical position, still it is the practical centre of the commonwealth, made such by the enterprise of her people in extending the system of railways in all directions, with this point as a pivotal centre. There are already seven important roads* radiating from this city, either completed or in rapid course of construction, giving at the present time a total of about seven hundred miles of finished road, over which daily or more trains run, and all within the boundaries of the State. Other lines beginning and ending elsewhere, yet likewise in the State, are not included, of course, in this consideration. These roads penetrate already, or will when completed,

* We have counted the Pacific Main Line and the Branch Line as separate roads, and likewise have assumed, that the Milwaukee and St. Paul terminates here. These roads are now owned by the North Pacific Railroad Company.

the principal centres of trade and agriculture lying in the Northwest.

Daily communication is already had by rail with the cities of Chicago, Milwaukee, and Duluth, and in the near future another, and, perhaps, in some respects; the most important link of all, that connecting St. Paul with Omaha and the Union Pacific Railway, known as the St. Paul and Sioux City Road. This line traverses the most fertile district in the State, as well as the most populous, following up the rich valley of the Minnesota to Mankato, where it leaves the river, holding a southwest direction for Sioux City in Iowa. The road is now completed as far as Madelia, one hundred and twelve miles from St. Paul, leaving a gap of about one hundred and fifty miles to be finished in order to make the proposed connection with the great central trunk road to the Pacific coast. We do not think that there is a single township of poor land along its entire route. On the other hand, speaking from personal observation, we know that the land is uniformly above the average in fertility, productiveness, and beauty.

Another, a more recent link of road, binding the city to the northeast and east as firmly as does the other to the southwest, is that known as the Lake Superior and Mississippi Road, reaching one hundred and fifty miles to the young city of Duluth, standing at the head of the great lakes, whence cheap trans-

portation to the Atlantic seaboard may be had for all the products of the Northwest.

Then there are the two lines in progress, which, with the one already running, will make three routes to Chicago and Milwaukee. By the present one, the St. Paul and Milwaukee, a whole day is consumed in making the journey, while by either of the others, sixteen hours only will be required. This saving of time will insure to the new routes a prosperous career. One of these new roads, the St. Paul and Chicago, nearly an air-line, is already done as far as Red Wing. This road follows the river to Winona, where it crosses, thence to Madison, making connection with a completed line to Chicago. When done, this will be the most desirable *all rail* route from the latter city to St. Paul and the principal towns along the river in Minnesota.

These truly great enterprises, of which St. Paul is the centre, form a just commentary on the prescience and industry of her people, who, while watchful of their own, do not forget the general interest of all, thereby giving to individual life a zest and recompense which mark only the highest and best purposes of our race.

Thus we see the iron arms of this possible future capital of the nation reaching out in all directions from this central seat of empire, binding firmly to it the great resources and vast wealth of the outlying

and now tributary country, which as yet is only in the alphabet of its development.

Time was when a visit to St. Paul was accounted an era in the life of the traveller, since its remoteness and general inaccessibility involved a special journey; but now, few fail to make the tour while passing through the West, since both the facilities and pleasures are so great.

To stand at the head of two thousand miles of steamboat navigation along the line of a single river is in itself, were there no city, an inspiration. And when we contemplate that more than ten thousand miles of inland navigation attaches to this great river and its tributaries, at the head of which stands the beautiful city of St. Paul, we do not marvel at the dreams of splendor and of power already haunting the thinking population of this vast interior valley. A few brief years and the sceptre of political empire will have passed forever into the hands of this people without question, and ere long thereafter we confidently predict that the seat of government will surely follow. We know that the population along the Atlantic coast deride this idea; and, while having shared heretofore like opinions with them, yet, on reflection, we believe the child is born who will live to see this an accomplished fact.

CHAPTER V.

CLIMATE.

The climatic divisions of the country.—Periodical rains.—Prevailing winds of the continent.—Changes of temperature.—Consumption in warm climates.—Cold, humid atmospheres.—What climate most desirable for the consumptive.—The dry atmosphere of the interior.—Dry winds of the interior.—Table of rain-fall of the whole country.

UNTIL a comparatively recent date the climate of the continent was held, by all of the more learned in matters of physical geography and climatic law, to have but one general characteristic; but these conclusions have been found to be utterly erroneous, and now it is known to be susceptible of division into three great and entirely distinct areas, each being highly marked, and leaving, on these various surfaces, peculiar evidence of their existence.

Instead of an *oceanic* climate prevailing over the entire continent, it is found to have but very narrow limits along the Pacific coast of the United States, being broken entirely from the interior by the elevated mountain ranges, conforming to them throughout their entire extent, and having a sweep

from near the thirty-sixth parallel to Sitka and the Aleutian Islands, away to the extreme northwest.

The second division embraces the great interior basin lying between the ranges of one hundred and twenty degrees and ninety-two degrees west longitudes, having a general trend from the southwest, at San Diego, to Hudson's Bay in British America, in the northeast. This vast district is paralleled by that of the interior climate and character of the continent of Asia in its elevation, aridity, and great extent, and may be known as the true continental or Asiatic climate of the United States. It is on the edge of this district, and visibly under its influence, that the State of Minnesota, for the most part, lies. But we pass, for the present, to the brief consideration of the third grand division, embracing the entire country east of a line drawn from near Central Texas to the centre of Wisconsin, including the immediate region surrounding all the great lakes. Here we have an association of elements constituting a highly variable climate, which prevails over all its surface at all seasons, with remarkable uniformity. The wide range in both vegetable and animal life over this area is one of its chief distinguishing characteristics, partaking of the semi-tropical on the one hand, with a low winter temperature on the other, but traversing neither range so far as to prove directly destructive in its effects. All over this east-

ern area are scattered lakes and rivers, with an ocean boundary line, and uniform forest ranges with a great variety of deciduous trees known to the temperate and sub-tropical latitudes; and it is quite remarkable to note that some of the latter forms extend in their acclimation to near the northern boundary lines of the Union, while the pine, walnut, and chestnut may be found at or near the extreme southern limits.

In all of these three grand divisions of climate, however, exceptional localities exist where there is a marked nonconformity to the prevailing characteristics. The peninsula of Florida is such an exception, owing to its peculiar location, and the great humidity of its atmosphere during a considerable fraction of the year. Here we have a fully developed season of periodical rains, beginning usually in June and ending in the latter part of September. The winter is the dry season, being contrary to the general rule applying to tropical and sub-tropical areas, and forms, with the mild temperature, the principal ground for the reputation which that State has as a resort for special classes of invalids.*

The sudden and extreme variations of temperature in this eastern climatic tract, whether from local disturbing causes, as is not unfrequently the

* For further particulars of Florida climate, see *A Winter in Florida*, by the author of this volume, published by Messrs. Wood & Holbrook.

case, or otherwise, are usually accompanied by cold draughts of air, chilling and generating all manner of ills, of which rheumatism and consumption are the separate and highest types.

While it is generally understood that the prevailing winds of the whole continent embraced within the limits of the United States are uniformly from the west, still, over this eastern division, counterwinds of a lower character disturb, modify, and elevate the course of this great westerly current, giving rise to the exceeding variability of the surface winds, which, as is well known, may blow within the brief space of twenty-four hours from all directions of the compass, at almost any time and point whatsoever.

Changes of temperature, while essential in some circumstances to health, may be, if of a certain specific character, infinitely damaging, and such are the cold humid winds from the northeast with easterly inclinations. These are the dreadful scourges of all the Atlantic slope above the Carolinas, and there is scarce any portion east of the Mississippi Valley free from their occasional visitation. In the extreme southern limits, along the Gulf, and on the Peninsular State, the poison, so to speak, of this wind, is so far modified by the greater temperature of these localities as measurably to disarm it of danger; yet, even in those latitudes, it is to be (during and after a prolonged storm)

avoided by all, and especially weak and enfeebled constitutions.

The cases of consumption found in these warmer climates have been cited as disproving the heretofore accepted theory that this disease was limited in range to the middle and eastern portion of the Union; and it has been further assumed that the liability to its attack was as great there as at any point further north.

These conclusions have little foundation in fact, as is well known by all who have taken pains to investigate the question with that thoroughness which the subject demands. The catalogue of ills belonging to all warm climates is not only long enough, but likewise sufficiently dreadful, without adding to it that scourge, which is the child of the northeast winds, with its home in the changeful temperature along the upper Atlantic coast. It is quite true that cases occur in even tropical districts, but they are the stray offspring of some unusual departure of the cold and humid northerly currents. It must not, however, be taken as a sequence of this proposition that any and all warm countries would prove a sovereign balm and remedy; but, that there are a few localities of this condition in temperature, where patients of the class under consideration may reside with positive advantage, and not unfrequent restoration to health follow, we both believe and know.

But there is so great a liability to contract some

of the many fatal febrile, and other diseases of hot countries, together with their usually excessive humid character and greatly enervating effects, especially on those who have been born and reared in cooler and higher latitudes, that it comes to be a serious question for consideration whether the chances of remedy hoped for in a residence at such places is not more to be dreaded than the disease itself.

In what direction, then, can the invalid turn with any immediate or ultimate hope of either relief or a permanent cure? We answer, that any place where a dry, equable climate can be found, all other things being equal, will give the desired relief and probable cure, if resorted to in season, and if certain hygienic regulations be carefully and persistently observed. The next question is, have we a climate answering this important requirement, and, at the same time, outside of the range of epidemics and fatal fevers; easily accessible, and affording, when reached, the necessary comforts and aids incidental to a restoration? To this we have an affirmative reply to give, coupled with some modifications, and point to the Central climatic division of the continent as possessing, in its dry elastic atmosphere and generally equable temperature, the requisite desideratum.

Minnesota lies within this division, and, while upon the outer edge, is still markedly under the influence of the prevailing climate which distinguishes the whole of this middle area. Other sec-

tions within its limits there may be, and, indeed, doubtless are, just as favorable, if not more so, than is that of Minnesota, but they are lacking either in facilities for reaching them, or in the needed comforts, and perhaps in the commonest necessities which are absolute in all cases,—a wholesome diet being one of the great essentials to recuperation.

Minnesota affords, of course, all of these aids in large abundance, and is likewise quite easy of access, thus answering, in these particulars at least, the ends desired.

It may now be well to examine the chief characteristics belonging to this central climatic division, on the northeastern edge of which lies the State under special consideration. We have already observed that the prevailing and prominent winds of the continent blow uniformly from the Pacific toward the Atlantic coast, having a slight northerly tendency. It is important that this fact be kept in mind. This wind is constantly sweeping across the North Pacific Ocean, by which it is tempered and ladened with a vast amount of moisture, which is borne to the shores of the continent, and, but for the elevated mountain ranges along the whole of that coast, would be quite evenly distributed over the interior, giving to all of the western and central area such an abundance of fertilizing rains as the western half of the continent of Europe now possesses, and to which this would then be in climate

almost an exact counterpart. But instead we have only a slender breadth of territory answering to the oceanic climate of Western Europe, embracing that which lies between the Pacific shores and the Sierra and Rocky Mountain ranges. Within this belt is precipitated nearly all of the moisture contained in the atmosphere. The warm, humid westerly winds, driven against the lofty and cool mountain sides, have their moisture suddenly and rapidly condensed, and the rain-fall on their western slope is found by measurement to be prodigious, reaching as high as sixty-five cubic inches for the year, being equal in quantity to that falling in many tropical districts, and greatly exceeding that of any other portion of the United States. These mountains have a determining influence on the climate, both of the coast and of that in the interior. They act on the clouds as they sweep against and over them like a comb, extracting all possible moisture, leaving a cool, elastic, and arid continental atmosphere for this central area under present review. The effect is at once pronounced and everywhere visible. Less than two degrees of longitude *east* of these mountain ranges there is but about (taking the whole line from the thirty-fifth parallel to the northern boundary) an average fall of seven and a half cubic inches of rain, a difference of over fifty-five cubic inches within the year, in districts separated by less than one hundred miles in a straight line from each

other. The consequence is, that, while in one there is a luxuriant growth in all kinds of vegetation, in the other barren plains (destitute of all except the lowest forms of vegetable life) exist, with a gradual but slow return, as the eastern course of the winds are followed, to that normal condition which prevails in districts where an abundant supply of moisture is furnished. This is not fully found till the western limit of the third climatic division is reached, where again we see on all hands a general distribution of rivers and forests over the whole of this area, with copious rains at all seasons, and humid and cool conditions of the atmosphere, following each other in rapid alternations; producing what we have seen fit to call the Variable climatic district, embracing the whole eastern half of the continent.

The extreme high temperature of the interior division equals that of points lying a dozen degrees south in other longitudes, and the desiccated winds from the west, as they blow over this parched and heated surface, have their aridity rather than their humidity increased, as would be the case in other circumstances; and not till they reach within perhaps five hundred miles of the eastern boundary of this continental division do they increase in humidity, as indicated by the rain-fall, which rises in quantity from the low minimum of seven and a half cubic inches per annum in the "great basin,"

and fifteen on the "great plains," to about twenty in Dakota territory and twenty-five in Minnesota, the eastern limit of this continental climate.

The effect of these dry winds on the humidity of the atmosphere in Minnesota is unquestioned and demonstrable by the records kept of the various governmental posts over the whole country. In contrast, the amount of rain falling annually in this State is shown by these statistics to be much below that of any lying east of the Mississippi, in the variable-climatic district; and, indeed, below that of every other in the entire Union, excepting Nebraska, which averages about the same amount of rain-fall, though without the same amount of dryness and elasticity, which are such notable features in the atmosphere of the former State.

The mean annual amount of rain falling in New England is about forty-three inches, nearly double that of Minnesota, exhibiting the vast difference in the humidity of the two localities, and this, in connection with the cold easterly winds before referred to as prevailing there at intervals, together with the severe changes (and which, it should not be forgotten, add to the quantity of moisture), may be ascribed the primal cause of all pulmonic diseases.

It should not be understood, however, that the *quantity* of moisture precipitated in any given district determines of itself the prevalence or non-prevalence of phthisic complaints; not at all, for we

see in Florida the rain-fall is very great, and as much exceeds that of New England as the latter does that of Minnesota, and consumption has no home on the peninsula of Florida. Why it has not, inheres in this fact, that the climate does not, or rarely, experience any of those violent and chilling changes of temperature that are almost constantly going on, especially in the fall, winter, and spring months, and which do the fatal work of death. But, some one says, the northeast winds reach Florida, and why do not the inhabitants suffer from it? For the reason that they are greatly changed in character, becoming mild and only pleasantly cool in temperature, offering no shock as a rule; and really the northeast trades, which almost daily blow, are the invigorating and healthful winds, sweeping away the miasma of the hot season, cooling the atmosphere, and preserving equability throughout the year. Then there are other matters; the drainage qualities of the soil, which is so great on that peninsula; then, too, is the distribution of the falling rain, whether it is filtered slowly through all the year, keeping things constantly drowned out, or in a state of flabbiness, or whether it is mainly confined to a single season or an inconsiderable fraction of the whole year, as in Florida. These become important inquiries, as all have a bearing on the question of the *healthfulness* of climates.

We have stated the rain-fall to be less in Minne-

sota than in any other State in the entire Union, with one exception; and while this is true, it is still great enough for all agricultural uses, coming chiefly in the summer months, at a time when the crops are growing; and, by the middle of September, as a rule, the quantity has fallen off to a very low mean, accompanied by that elastic, invigorating atmosphere for which the State is so justly famed. This season of charming weather continues, with little interruption, only accompanied by a gradual diminishing scale of thermometric registration, up to the advent of winter, and even then the moisture falling in snow is less than is generally supposed or believed.

Since these matters are of vital character in determining the salubrity of the climate of this State, we append the following table, both for the purpose of comparison with other places and definiteness concerning this.

This table gives a sweep of country from ocean to ocean, and exhibits the rain-fall of the three climatic divisions very faithfully. The great quantity precipitated at Astoria, in Oregon, is observed, where the OCEANIC climate prevails, with the mountain barriers limiting its extent inland; while, at Fort Laramie, in Wyoming Territory, is an average representation of the whole interior district possessing the dry and elastic CONTINENTAL climate, in which lies the State of Minnesota. The other portions of

the table give a more extended view of the VARIABLE climate, covering the eastern area as previously defined.

Average Annual Fall of Water (rain and snow, given in inches) for a Series of Years, as ascertained from Official Sources.

PLACES.	WINTER.	SPRING.	SUMMER.	AUTUMN.	YEAR.
Fort Snelling, Minn.	1.92	6.61	10.92	5.98	25.43
Fort Ridgely, "	4.11	7.29	9.29	4.83	25.52
Astoria, Oregon . . .					65.00
Fort Laramie, Wy. . .	1.63	8.69	5.70	3.96	19.98
Fort Crawford, Wis. .	4.00	7.63	11.87	7.90	31.40
Fort Gratiot, Mich. . .	5.75	8.02	9.99	8.86	32.62
New Harmony, Ind. . .	12.29	10.51	12.79	7.26	42.85
Cincinnati, Ohio . . .	11.15	12.14	13.70	9.90	46.89
St. Louis, Missouri . .	6.94	12.30	14.14	8.94	42.32
Chicago, Illinois . . .					
Philadelphia, Penn. . .	10.76	9.81	11.93	9.84	42.34
Lambertville, N. J. . .	9.67	11.25	12.15	11.59	44.09
Fredonia, New York . .	6.82	7.24	10.45	12.04	36.55
Utica, " "	8.72	9.26	12.83	9.76	40.57
Albany, " "	8.30	9.79	12.31	10.27	40.67
Brooklyn, " "	9.83	11.75	11.43	10.35	43.36
Providence, R. I. . . .	9.44	10.45	9.66	10.50	40.05
New Bedford, Mass. . .	10.42	10.67	9.18	10.76	41.03
Worcester, " "	11.85	10.89	10.71	13.51	46.96
Cambridge, " "	9.89	10.85	11.17	12.57	44.48
Hanover, N. H.	9.10	9.90	11.40	10.50	41.00
Portland, Maine	10.93	12.11	10.28	11.93	45.25

The fall of snow has been in this statement reduced to a water basis, allowing, as is the usual custom, ten inches of snow for one of water. This calculation is not entirely reliable for all points; as, at the extreme southern snow-line, a less, while a larger amount is required for a more northerly district—say about eleven inches to make one of water

in Minnesota. This would give a depth of about two and a half feet (snow) over the surface of the State for the entire winter months, while in Central New York—to which in mean annual temperature Minnesota parallels—the depth of all water falling, for the same season, would (in snow) amount to full five feet, or double that of the State under consideration.

CHAPTER VI.

CLIMATE—CONTINUED

The atmosphere of Minnesota.—Its dryness.—Falling snow.—Equality of temperature.—Rain-fall for spring.—The constitutional character of the climate.—The lakes and rivers of the State.—The northeast winds.—Where the northeasters begin.—Their general direction and limit.—The atmospheric basin of Iowa.—Neglect of meteorology.—Its importance to the country.

THE atmosphere in Minnesota in the winter is like a wine, so exhilarating is its effects on the system; while its extreme dryness and elasticity prevents any discomfort from the cold which is such a bug-bear to many. The extreme cold does not last but for a few days, and should the invalid choose to be domiciled during this brief interval, no great harm would come; but we apprehend that, once there, they could not be kept in-doors in consequence of it. Why, laboring men in the lumber districts to the north of St. Paul perform their work without overcoats, and frequently, and indeed commonly, without a coat of any kind, simply in their shirt-sleeves; nor need this seem incredible, as in a dry, cold climate the body maintains a much greater amount of

animal heat, and if exercise is had, a profuse perspiration may be easily induced, and a fine glow of health inspired; with the extremities warm, sensitive, and throbbing with life.

We once spent the winter on the island of Prince Edward, lying in the Gulf of St. Lawrence. This island is quite narrow, and between one and two hundred miles in length; all the northerly winds having a tremendous sweep over it, and the mercury in winter creeps down for a few days to a point where it is frozen stiff. On such occasions we found it far less inconvenient to go out, indeed, it was not an inconvenience at all, but rather a positive pleasure; daily walks and fishing through the ice gave constant amusement. But when the mercury was above zero, with the wind from any quarter, coming damp and chilling, a feeling of discomfort would drive you to shelter. The raw, damp wind off of the surrounding seas being a natural conductor of both animal and electrical heat rapidly carries off the vital warmth of the body to the destruction of life. In illustration of this, and as giving greater force to the practical experience of men everywhere, we are induced to quote the statement made by Dr. Kane, that often when the mercury was congealed, both he and his men found it not at all unpleasant, and by moderate walking were able to keep entirely comfortable; while, at and above zero, with a brisk wind blowing they suffered greatly.

Let us look fairly in the face this winter temperature in Minnesota, and see how it compares with that of Central New York. The tabular statement below is from official records.

The Mean Winter Temperature at St. Paul and Utica.

PLACES.	WINTER.	SPRING.	SUMMER.	AUTUMN.	YEAR.
St. Paul	16° 1'	45° 6'	70° 6'	45° 9'	44° 6'
Utica	24° 5'	44° 5'	66° 5'	47° 3'	45° 7'

The difference in range for the winter between the two points, is a fraction over eight degrees in favor of Utica, while the mean annual range is but one degree and a fraction higher than the yearly average at St. Paul. There can be no doubt in our minds, that the cold of winter is more trying to all classes at Utica than it is at St. Paul; and, that a greater amount of warm clothing is necessary to maintain an equal feeling of comfort, at the former, than is required at the latter place, notwithstanding the mercury ranges through the three months of winter at an average of eight degrees less at St. Paul. The reason is found in the fact of a more humid atmosphere existing at Utica, and, indeed, at all points in the variable-climatic district, whether north or south of either the thermal lines or latitudes in which Minnesota rests.

“There is no rain falling during the winter months in the State as a rule, the temperature being too

* The various tables are chiefly from Blodgett's *Climatology*, to which we are otherwise much indebted.

cold, while the snow accumulates gradually, falling in the finest of flakes, and light as down itself. The average monthly snow-fall of the three winter months reduced to water, is but a little over half an inch, or about six inches of snow per month. A uniform line of low temperature—averaging near sixteen degrees, unbroken by thaws except under the occasional warm glare of a noonday sun—usually keeps this thin covering on the ground all winter so dry, that the deerskin moccasins, which many persons habitually wear, are scarcely moistened the season through. There are occasional upward oscillations of temperature ; and, once in a series of years, a thaw in January or February ; but these are rare occurrences. Rain has not fallen in winter but once in many years. The whole winter is a radiant and joyous band of sunny days and starlight nights. This inaugurates the carnival season when sleighing and merrymaking parties in both town and country form one unbroken round of pleasure.”

The advantages of this winter season is that, while a cold climate, it still admits of the invalid taking constant daily exercise with an entire freedom from liability to “catch cold,” the system freed from sudden shocks incident to the coquetting climate of the East ; the lungs and whole body strengthened and braced by the tonic effect of this continental climate.

“It is the most normal climate on the continent. No other is so exquisitely symmetrical in its entire

annual development. In no other are the transitions of temperature and moisture so completely in harmony with nature, so accommodated to the laws of organic life and growth. Thus the entire physical organism of Minnesota is, so to speak, emblematical of the * * * relations which attach to its geographical position."

The advance of spring does not, here, bring those unending floods and winds which drown men out and blow the universe to tatters, as is the case in New England and other areas lying eastward.

The months of March and April rank very low in their rain-fall in comparison with any point situated along the same thermal lines; while May is scarce up to the average, but yet sufficient to supply the seeds and grasses with all the moisture required.

For the purpose of exactness the following table is annexed, giving a view of the question and illustrating it far better than any discussion can hope to do.

Mean Water Precipitation For Spring (in inches)

PLACES.	MARCH.	APRIL.	MAY.	TOTAL.
St. Paul	1.30	2.14	3.17	6.61
Utica	2.75	3.17	3.34	9.26
Providence	3.26	3.66	3.53	10.45

This furnishes a most striking commentary on this particular season for the localities named, and warrants the statement that the first two-thirds of it

can be considered a continuation of the dry climate which we have now traced from about the middle of September to the first of May, a period of seven and one-half months, in which the rain-fall is but a third of the entire quantity precipitated throughout the whole year; while that of the entire year, even, is seen to be but a trifle over the half of that falling over any portion of the variable district, occupying so large a portion of the whole United States.

It is an astonishing development, and would be scarcely credible, but for the array of actual facts and figures, through a long series of years, by persons entirely unbiased, and who in the employment of the general government had no other ends to serve but that of accuracy. Previous favorable reports had gained much reputation for the State, but it seemed to lack official backing, until the searching in the published files of the War Department set the topic at rest, and proved the climate of this State out of that division to which the great valley of the Mississippi had been assigned, and to which the State of Minnesota had been thought, heretofore, to belong.

The great isothermal lines, beginning along the Atlantic coast at the fortieth, forty-first, and forty-second latitudes—with their initial points between Long Island and the northern boundary line of Massachusetts—sweep westward with an upward tendency, striking Minnesota at the forty-fifth par-

allel (St. Paul), when a sharp curve to the north distinguishes their course, thence bearing away gradually westward along the valleys of the Red and Saskatchewan Rivers to the Pacific Ocean.

If there are any doubts by our readers as to the continental character of the climate of Minnesota, let them answer how it is that this sharp curve of the thermal line happens in its westward course just on the frontier of that State. And likewise the reason of the arid climate prevailing for nearly three-fourths of the year, so unlike that for a thousand miles eastward or southward of it.

Two-thirds of the entire fall of water for the year (whether snow or rain) descends during the summer, with the addition of a part of May and September. The quantity is a trifle over that in parts of Michigan, while much less than the average of all points east or south. With regard to that of Central New York at Utica, a type of the eastern area, and previously referred to—it is two inches less. Thus the summer, while not a dry one, fortunately, is below the mean of the variable district.

It would be a wrong conclusion should any one decide that the summer was lacking in those qualities of atmosphere which so happily characterizes other portions of the year. True, there is a diminution of aridity, but no disappearance, and the effect on the invalid is beneficial and decided.

The humidity of the atmosphere is not always de-

terminated by the rain-fall. There may be considerable water precipitated during a single season, and the air of the locality be, before and after the rains, dry and elastic, as the case at Santa Fé, in New Mexico, and at other points which might be mentioned. Among these is that of Minnesota. Its geographical position and physical structure is such as to insure these elements in large measure, even for the climate of her summers.

If the quantity of rain and snow falling at all seasons in a given district depended on itself for the supply, then the amount of water precipitated would, were the winds out of consideration, be determined by the amount of lake, river, and ocean surface within its own boundaries. In this event Minnesota would among the States occupy the very highest place on the scale,—with, perhaps, a single exception,—since the whole face of the commonwealth is dotted all over with lakes, sliced with rivers, and skirted in addition by a great inland sea.

To many who travel over the State it seems a marvel that the atmosphere should have any elasticity or any tonic properties.

It is, however, known that countries are usually dependent, for the beneficent rains falling over them, on oceans quite remote, where the sun, in its tropical splendor and power, lifts high in air immense volumes of water in a state of evaporation, which,

borne on the "wings of the wind," speeds rapidly away to supply the drying rivers and fountains of the globe. This aerial pathway supplies the link in the great circuit by which all the waters of all the oceans pass over our heads, returning again under our feet to their natural home.

Of course the water area of all sections of the temperate latitudes contribute something to the precipitation; yet it is but a fractional part of the whole, and quite inconsiderable. Still its influence is sufficient to make it observable near large seas like our own inland system, where the quantity falling is, in the cooler portions of the year, increased in consequence of the then higher temperature of the water of the lakes over that of the adjacent land districts. In summer, the only effect is to increase the humidity of the atmosphere and frequency of rains, without adding to the quantity. This phenomenon is seen on the shores of all the lakes, and especially in the Lake Superior region. But this influence does not extend westward to exceed the distance of, we should say, fifty miles, and does not consequently effect to any important degree the climate of Minnesota, except the outlying rim described. The small lakes and rivers do not contribute much to the precipitation of rain within the State boundaries. They may add slightly to that of the lake district to the eastward, whither their moisture is borne by the southwest-

erly and westerly currents. They do undoubtedly have an influence on the temperature, modifying that of the winter very much, and in this respect are valuable as well as beautiful.

The southerly winds, and those having a slight westerly tendency, prevailing a portion of the summer, do not bring hither much of moisture, though at their outset they are heavily laden with it, as it is borne across the Gulf, in a southwesterly direction, to the open valley of the Mississippi, where, coming in contact with the edge of the great westerly winds, and broken probably somewhat by the elevated district of Mexico and by the foot-hills of the Rocky Mountains, which extend to the northern boundaries of Texas, this humid wind drives, unresisted by any vertical obstruction, up the valley of the "Great River," shedding on either hand its waters profusely; but their force and character, in this long march, become spent, and they add only their proportionate amount of rain to the Minnesota annual fall, while the intermediate districts are chiefly dependent on them.

The northeast winds of spring and autumn, which sweep at times half across the continent, usually begin at a low point along the Atlantic coast—driving sometimes furiously, and always persistently, its hurried, chilling current inland,—is baffled by this southwesterly current of the Gulf, and always, sooner or later, turned, as it moves up the coast and interior

by the overpowering and underlying continental winds which drive it back, bringing these northeasterly storms to us, nearly always from a southwest quarter. We enlarge upon this class of rain-storms for the purpose of showing, though imperfectly, their non-prevalence over the State of Minnesota. This is important if it can be, even but partially, established; since it is this particular class of storms and winds, last referred to, that are to be so much avoided and to which can be traced the initial point of most pulmonic troubles.

These storms from the northeast may begin in Texas, their course being north and eastward; as that by the time they reach so northerly a point as New York, their westward limit may not exceed St. Louis; and, in further illustration, when Quebec feels the force of the storm, Chicago is at its extreme western limit. This supposed course will convey the general idea of the track of a northeaster when it envelops the whole variable-climatic district of the Union. There is a singular eddy known to all climatologists to exist in Iowa, where the annual precipitation of water is great, exceeding that of all the surrounding States. There has been no positive theory advanced, to our knowledge, explaining this circumstance, but the mystery is solved, to our minds, quite clearly. This eddy makes the key-point of contact of the humid Gulf winds with the cool winds of the westerly current, and likewise being the

northwestern terminal point of the course of the great northeasters, the contact being the cause of the excess in precipitation. We were fortunate, while visiting last autumn this special wet district of Iowa, to experience one of these triangular storms. We were at Dubuque while the wind was blowing gently from the south-southwest, with low scattering clouds, and before night it began to thicken and rain, while, in the night, the wind shifted to the east, blowing the rain briskly before it. This continued a part of the following forenoon, when, taking the train west to Rockford, northwest of Dubuque, we reached nearly the edge of the easterly storm, which had been here simply a drizzling rain. The next day the rain had ceased, the wind had shifted to the northwest, rapidly drying the earth, and the clouds, both of the upper and lower strata, were all driving hurriedly east-southeast. We left the following day for Fort Dodge and Sioux City. At the former place they had had a slight shower only, with shifting winds; while at Sioux City not a particle of rain had fallen, the roads being not only dry but quite dusty. This was not a merely local storm, but was the only great easterly one covering any extent of territory and time, answering to the equinoctial, which visited the United States during last autumn.

This special limit of storms, this eddy of the winds in Iowa, deviates more or less in the district

assigned to it, and, at times, some of these north-easters undoubtedly blow over Minnesota, but they are few, and much modified in kind and character. The elevation of the State over other portions of the great valley south of it adds something probably in determining the outline of the Iowa basin of precipitation.

The range of the thermometer in the hot season is, in Minnesota, above that of places occupying the same lines of latitude; this is caused, in part, by the arid continental winds and by a less cloud-obstructed sunshine, but the heat is not correspondingly oppressive with that of other localities, since the atmosphere is not as humid. The evaporation under this heat of summer rises out of the immediate region of the surface, and is borne away on the prevailing winds to the lake district and eastward. It is unfortunate that there have been no tests of a hygrometric character maintained through any great period, whereby reliable data could be adduced, since it would have seemed as easy for the government to have undertaken that branch of meteorology as any other, it only requiring a more careful and accurate hand than do the other observations. The delicacy of these experiments have proved too wearisome for private parties, and there is over the whole country a lack of this scientific evidence. The last report of one of the cabinet ministers at Washington calls attention to the need, and benefit

arising from reliable testimony, under this head, and asks an appropriation, which it is hoped may be granted, in the interests of both health, agriculture, and science generally.

The question of climatic treatment and cure for certain ills is receiving yearly increased attention, and this will continue until a specific climate is found for many of the most destructive diseases afflicting the race.

CHAPTER VII.

CONSUMPTION.

Consumption mapped out.—The east winds.—Comparative statistics.—Number of original cases of consumption in Minnesota.—Consumption can be cured.—Rev. Jeremiah Day.—Fresh air the best medicine.—The benefit of a dry atmosphere.—Equability of temperature.—The power of the mind over disease.—Kinds of consumption.—Danger in delays.

To all who are afflicted or threatened with pulmonary troubles the climate of Minnesota becomes, in view of its reputed freedom from this scourge, an interesting subject of inquiry.

For a long time it was maintained that this disease was not affected by climate, but that it was the child of other causes, and that its cure was impossible ; and dread of its visitation became as great as at the approach of any of the great maladies afflicting mankind.

Later and wiser investigation has proved it to be so much controlled by climate that it may be practically located on a chart of the globe, if all the climatic conditions are fully known. Of course, it is not absolutely confined to any given limit, more than is the yellow fever, which sometimes

makes its appearance as high as the forty-second degree of latitude, while its actual home, so to speak, is, on this continent, below the thirty-fifth parallel.

In a medical chart of this country, which we had occasion to examine many years since, the district where consumption attained its maximum range was outlined along the coast, beginning with the State of Maine, having a semi-circular sweep to Fortress Monroe in Virginia, with an inland limit varying from one to two hundred miles. This is well known, now, to all the medical profession, to be the territory where *phthisis pulmonalis* has greatest sweep, and this is conceded to be, for the most part, caused by the marked peculiarities of climate existing over all this area. These peculiarities have, in some of the immediately preceding chapters, been duly though briefly set forth, and we now proceed to the consideration of the sanitary value of the Minnesota air and its effects on lung diseases as experienced by sufferers and observed by others, together with some of its leading characteristics.

If it has been sufficiently shown that the temperature of the district in which consumption prevails most is a highly variable one, passing almost daily from a low to a high point in the thermometric scale, with the prevailing winds to be those in which east largely enters; and that these winds come laden with a cold moisture, borne from off the

surface of the North Atlantic, which, when exposed to their sweep, chill the person and pave the way to colds, catarrhs, rheumatism, pneumonia, and a score of other ills scarcely less harassing and destructive, and all of which give rise to the "great destroyer," as it has been sometimes called. If, as we have said, these points have been proved to be the leading ear-marks of this special locality, what, we may ask, are the characteristics, briefly stated, of the climate of the State, which is known to be comparatively free from, and, in very many instances, to have wrought for the sufferer a complete restoration of health and strength? They have been seen to be almost the exact antipodes of that of the consumptive district before named. Instead of the northeast wind, there is the northwest, or at least the prevailing winds from some point into which *west* enters: bringing, in place of the cold, humid atmosphere of the North Atlantic, the dry continental winds from the interior, which, in conjunction with the high altitude and peculiar geographical position of the State, give, instead of the extreme variable temperature, an equable and a relatively dry atmosphere, having a bracing, tonic effect on the whole man, affording opportunity for unrestrained exercise in the open air, causing good digestion to wait on appetite, and with these the advent of fresh wholesome blood, which is the physician to heal the diseased portions of the lungs,

and restore healthful action to all of the inflamed parts.

In confirmation of the high value of this State as a residence for invalids of the class to which special reference is made, we extract from the last census report the following statistics, showing the average number of deaths from consumption in the following States to be

One in 254 in Massachusetts,

One in 473 in New York,

One in 757 in Virginia,

One in 1139 in Minnesota.

This speaks for the climate more of praise than it is possible for any scientific speculation to do, since it is the practical and final test as well as the most satisfactory.

Undoubtedly, the relative disproportion would be very much greater if the number of deaths of those who go from other States, after it is too late for them to receive any benefit, could be eliminated from the actual number that die from among the inhabitants themselves. The question may arise right here among some of the more skeptical, how it is that any of the population are afflicted with this disease, if the climate is such an enemy to it? We answer—that full half of the deaths reported from phthisis are of those who come too late—as before stated—and a fourth of the whole number we know to be from among those who are not natives,

but yet are of the *regular* inhabitants, whose lives have been prolonged here, and who from improper exposure or neglect of wholesome rules (which they at first rigidly followed, but growing better, neglected to maintain), have paid the penalty. Not over one-third of the entire list of inhabitants of the State, up to the present time, are natives; hence deaths from consumption among the remaining two-thirds cannot be attributed, by any fair inference, to the direct influence of the climate. This still leaves a fourth of the whole number of deaths from this scourge to fall on those who "are to the manner born." This is a very trifling percentage, and might be waived as not being a fraction sufficiently important to merit much attention; but we may frankly admit that these cases appear here, and are the result of a want of a *perfect* equability in the climate, and to this extent it must be held answerable. We might, however, conclude that even this final fraction could be accounted for in the hereditary taint, but we forbear, as we likewise do to claim entire exemption here from this complaint. No climate, perhaps, in any portion of the whole habitable earth, could be found to be utterly exempt. Then, too, consumption is to general debility a natural sequence, almost as much as flame is to powder when exploded; and as there are likely in all climates, however favorable, to be found worn-out and exhausted humanity, why, there must

be expected untimely deaths culminating in this disease.

The curability of consumption is now a settled question. Every medical student has either seen for himself or been assured by his professor that post mortem examinations have disclosed this truth beyond all cavil. Numerous cases might be cited where, at an early period in life, tubercles had formed, and by-and-by, probably in consequence of a change in the habits of life, these disappeared, leaving naught but old cicatrices as evidence of their previous diseased condition. These tubercular deposits must have disposed of themselves in one of three ways: *first*, they might soften down and be expectorated; *second*, they might soften and be absorbed; or, *thirdly*, they might become calcified and remain as inert foreign material. In many cases all these processes might unite in the removal, and a long life follow, as is well known in some instances to be true.

An eminent instance in point occurs to us as we write, and which is worthy of citation in these pages. The lamented Rev. Jeremiah Day, once President of Yale College, when a young man, had "consumption," and was expected to die, but by a rigid observance of the laws of health, and self-imposition of stated exercise of a vigorous nature in the open air, he, by these means and without much of travel, restored his debilitated frame and healed the dis-

eased lungs, and died at the rare age of ninety-five, having lived a life of uncommon usefulness and activity. He could not have accomplished his restoration without many and daily sacrifices compared with the lot of his fellow-men. A post mortem showed plainly that both apices of the lungs had been diseased.

There are many cases, of which no knowledge exists outside of a small circle, of restored health, though with impaired power of respiration and consequent endurance of great hardships, which latter, of course, must be entirely avoided by those thus situated. There is, too, even greater liability to a fresh attack than with persons who have never been afflicted, but the vigilance necessary to maintain health fortifies against its repetition.

One of the essentials in effecting a cure is FRESH AIR; and if this can be had in such form as to give more of oxygen—the vital element—than is usually found, the healing processes must be accelerated, beyond doubt. The family physician will tell you this. Now, under what circumstances is a larger amount of oxygen found? What climate affords most, all other things being equal? It certainly is not a *hot* climate, nor a variable moist one such as prevails all over the consumptive district which we have indicated at the beginning of this chapter. It is found in a cool, dry climate, and this condition is had in Minnesota with greater correlative advan-

tages than in any other section of the Union known up to this time. The atmosphere is composed of two gases, oxygen and nitrogen, and in every one hundred parts of common air there are about seventy-five parts of nitrogen and twenty-five of oxygen, subject to expansion from heat and of contraction from cold. This accounts in part for the general lassitude felt in a warm atmosphere, while a corresponding degree of vigor obtains in a cold one. The condensation, the result of a cool temperature, gives to the lungs a much larger amount of oxygen at a single inspiration, and, of course, for the day the difference is truly wonderful. The blood is borne by each pulsation of the heart to the air-cells of the lungs for vitalization by means of the oxygen inhaled—the only portion of the air used by the lungs—giving it a constantly renewing power to energize the whole man. If a cold climate is attended with great humidity, or raw, chilling winds, the object is defeated and the diseased member aggravated, as would also be the case even if the climate was not a cold, raw one, but was a *variable* cold one; as then the sudden changes would induce colds, pneumonia, and all the train of ills which terminate in this dire calamity we are so anxious to avoid.

Equability and *dryness* are the essentials of a climate in which consumptives are to receive new or lengthened leases of life.

The following testimony is of such a high value that no apology need be offered for its introduction here. It is, in the first case, from one who was sick but is now well, and, in the other, from a party whose observation and character give weight to opinions.

The able and celebrated divine, the Rev. Horace Bushnell, D.D., of Hartford, Conn., in a letter to the *Independent*, says :—

“I went to Minnesota early in July, and remained there till the latter part of the May following. I had spent a winter in Cuba without benefit. I had spent also nearly a year in California, making a gain in the dry season and a partial loss in the wet season ; returning, however, sufficiently improved to resume my labors. Breaking down again from this only partial recovery, I made the experiment now of Minnesota ; and submitting myself, on returning, to a very rigid examination by a physician who did not know at all what verdict had been passed by other physicians before, he said, in accordance with their opinions, ‘ You have had a difficulty in your right lung, but it is healed.’ I had suspected from my symptoms that it might be so, and the fact appears to be confirmed by the further fact, that I have been slowly, though regularly, gaining all summer.

“This improvement, or partial recovery, I attribute to the climate of Minnesota. But not to this alone, other things have concurred.

“First, I had a naturally firm, enduring constitution, which had only given way under excessive burdens of labor, and had no vestige of hereditary disease upon it.

“Secondly, I had all my burdens thrown off, and a state of complete, uncaring rest.

“Thirdly, I was in such vigor as to be out in the open air, on horseback and otherwise, a good part of the time. It does not follow, by any means, that one who is dying of hereditary consumption, or one who is too far gone to have any powers of endurance, or spring of recuperative energy left, will be recovered in the same way. A great many go there to die, and some to be partially recovered and then die ; for I knew two young men, so far recovered as to think themselves well, or nearly so, who by over-violent exertion brought on a recurrence of bleeding, and died. * * * The general opinion seemed to be that the result was attributable, in part, to the over tonic property of the atmosphere. And I have known of very many remarkable cases of recovery there which had seemed to be hopeless. One, of a gentleman who was carried there on a litter, and became a hearty, robust man. Another, who told me that he coughed up bits of his lungs of the size of a walnut, was there seven or eight months after, a perfectly sound-looking, well-set man, with no cough at all. I fell in with somebody every few

days who had come there and been restored ; and with multitudes of others, whose disease had been arrested so as to allow the prosecution of business, and whose lease of life, as they had no doubt, was much lengthened by their migration to that region of the country. Of course it will be understood that a great many are sadly disappointed in going thither. * * *

“The peculiar benefit of the climate appears to be its dryness. There is much rain in the summer months, as elsewhere, but it comes more generally in the night, and the days that follow brighten out in a fresh, tonic brilliancy, as dry, almost, as before. The winter climate is intensely cold, and yet so dry and clear and still, for the most part, as to create no very great degree of suffering. One who is properly dressed, finds the climate much more agreeable than the amphibious, half-fluid, half-solid, sloppy, gravelike chill of the East. The snows are light—a kind of snow-dew, that makes about an inch, or, sometimes three, in a night. Real snow-storms are rare ; there was none the winter I spent there. A little more snow, to make better sleighing, would have been an improvement. As to rain in winter it is almost unknown. There was not a drop of it the season I was there, from the latter part of October to the middle, or about the middle, of March, except a slight drizzle on Thanksgiving

Day. And there was not melting snow enough, for more than eight or ten days, to wet a deerskin moccasin, which many of the gentlemen wear all winter."

The Rev. H. A. Boardman, D.D., of Philadelphia, writes under date of October, 1868, to a public journal, the following: "* * * The question is often asked, 'how far is St. Paul to be recommended as a resort for invalids?' If one may judge from indications on the spot, invalids themselves have settled this question. I have never visited a town where one encounters so many persons that bear the impress of delicate health, present or past. In the stores and shops, in the street and by the fireside, it is an every-day experience to meet with residents who came to Minnesota, one, two, five, or ten years ago, for their health, and having regained, decided to remain. I have talked with some who, having recovered, went away twice over, and then made up their minds that to live at all they must live here. * * * * *"

The statements of these observing and reflecting men are of the first importance, and require no scientific deductions to prove the benefit certain classes of consumptives may receive by a residence in Minnesota; but if it is found that whatever of data in meteorology there is bearing on the climate of this State, confirms the universal public judgment, this then becomes a matter of most agreeable interest.

It seems that the *dryness* and *equability* are the important features, as before observed. A gentleman, given somewhat to investigation, made the statement to us, while in St. Paul, that he had carefully watched the ice-pitcher on his table during the summers, and that it was rare that any moisture accumulated upon the outside of the same, as is commonly the case elsewhere. This is itself a most interesting scientific fact, and completely demonstrates the great dryness of the atmosphere during even the wet season of the year, as we have found the rain-fall in summer to be about two-thirds of the whole annual precipitation. Physicians have not generally thought that the *summer* atmosphere of this State was any improvement upon that of other localities of like altitude, judging from the rain-fall, which, being up to the average of this latitude elsewhere, left as much of moisture, they have concluded, floating near the surface as at other points, and they are led to send patients into less dry districts, or even, as is sometimes the case, to the sea-shore. Graver mistakes could not well occur than these, and it is to be ascribed to the little definite knowledge we as a people have on medico-meteorology. Except for debilitated constitutions, which, it is true, precede many cases of consumption, the sea-shore is to be avoided, especially in every instance of diseased lungs. Doubtless, the habit of advising a trip to the sea-side for the relief

and cure of whooping-cough in children has led in great part to this error. The trip to the mountains, if a location is well selected, is likely to be, and usually is, in summer a real benefit. But then, the physician should know something of the reputation of the particular locality to which he sends his patient. To illustrate:—suppose a patient afflicted with phthisis is sent to the White Mountains, and in company or alone, he reaches that region, and we will assume that he settles down at the “Profile House,” or at any portion of the hills on their eastern slope, or immediate vicinity, and the result is almost certain to be unfavorable, since constant showers and violent changes of temperature are transpiring throughout the entire summer. If, however, a moderate elevation, away from the immediate influence of the mountains, out of the range of the frequent showers, with a southwest exposure of landscape, where the cool westerly winds have play, decided advantage will come to the sufferer. It would not likely be at once perceptible, but a gradual toning up of the system might be looked for, with an improvement of the general health. Indeed, any change to either the sick or overworked, for that matter, who are able to withstand the fatigue of a journey, is of benefit, even if the climate and location are not improved, as it is well known that a change of scene is a relief and recreation to the mind, which often plays an important part in the

recovery of invalids. We all remember the story of the prisoner who had been condemned to suffer death, and at the appointed hour was led blindfolded to the dissecting hall, where were assembled the physicians who were to conduct the experiment. Being duly disrobed and placed, he was informed that an artery was to be opened, and left to bleed till life expired. An incision in the flesh at the back of the neck was made, as a mere feint, and warm water allowed at the same moment to trickle slowly down his shoulder and back, when, in a brief time, spasms set in, and death ultimately followed.

This gives a clear view of the will power inhering in the mental man, and its wonderful influence on the body. Sudden news of misfortune, or great attacks of fear, have produced instant prostration and bodily suffering, and these cases occur so frequent that all within the range of an ordinary life are familiar with them.

An English author speaks of the potent power of the mind over the body, and declares that the act of coughing can be, very often, wholly restrained by mere force of will. This should not be lost sight of by any who are attacked with colds or bronchial troubles, or even in the incipient stages of lung difficulties; as thereby they may lessen the inflammation, and defer the progress of the disease. We have seen people, who, having some slight irritation in the larynx, have, instead of smothering the reflex

action, vigorously scraped their throats, and coughed with a persistence entirely unwise, inducing inflammation, from which they might date, perhaps, their subsequent bronchial troubles. It is not in coughs alone that the will exerts a mastery. In a case of fever, by which an elder brother was brought very low, scarce expected by either his friends or physician to survive, a neighbor calling, was allowed to enter the sick-room. The patient was too ill to take much notice of the visitor, and the visitor likely felt that what he might say would not effect the result, and, being rough in manners and coarse of speech, bawled out, in a loud tone, that "he wouldn't give much for his (the patient's) chances," and stalked out of the room. Happening to be present, and fearing the effect of this ill-bred visitor's remark, we drew near the bedside to hear the prostrate invalid whisper out that he was determined to live, if only to spite the old fellow. His recovery seemed to date from that event, and in a few weeks he was in possession of good health.

Consumption is divided into several classes ; the more common forms are the inflammatory, the hereditary, the dyspeptic, and the catarrhal. There are others, but these suffice for purposes of brief mention of the leading characteristics of all cases.

The inflammatory is often the more difficult of management than that of the others, as its attack is violent and prostrating to such a degree as to ren-

der the usual aids of exercise and diet out of the question, for the most part. Long journeys, for any purpose, are to be avoided, though removals from the immediate sea-coast, to some dry, sandy section in the interior, within a hundred miles or so, is advisable. The robust and strong are equally subject to this class of consumption. Contracting a violent cold, such as might be taken when in a state of excitement and great perspiration in a ball-room or at a fire, and without sufficient protection pass out into the chilling air, inflammation of the lungs immediately takes place, and the chances are great of either a fatal termination of life or a shattered constitution.

The hereditary class are more frequent, and, by proper treatment of themselves, many may attain to a comparatively long life, and be able to do much of valuable service, if their employment takes them out in the open air. Of course many, inheriting this disease and having enfeebled constitutions, cannot be saved, let what will be done, and it is probably a wise provision that they are not. Consumptives should be careful to remember their great responsibility in forming alliances whereby this terrible evil is perpetuated. There should be some law enacted prohibiting the marriage of confirmed cases of scrofula, consumption, and insanity, even though complete recovery be had, as frequently happens in these difficulties.

The dyspeptic cases are numerous, and arise usually from general debility, caused by insufficient or unwholesome diet, close apartments, a too sedentary life, long depression of spirits, coupled with, perhaps, uncleanness and irregularities, all contributing to this result. These can all be relieved, and many fully restored, if taken in season, by a counter course of living.

The catarrhal forms of consumption are more difficult to treat, and, in numberless instances, baffle all medical skill, and that is very trifling, which can be applied directly to the seat of trouble. Repeated "colds in the head," taken and neglected, become by-and-by confirmed, and pass from the rank of common colds to that of chronic catarrh. Indeed, catarrh is no more or less than a chronic cold in the head; but after the lapse of time, and this may vary in different persons, from one to a score or more of years, it assumes a more virulent character, involving, perhaps, the whole of the breathing apparatus. Its encroachments are insidious, and often are lightly considered, but the general tendency of all cases of catarrhal affections is to the lungs. Sometimes this approach is by a sudden leap, in consequence, probably, of a fresh stock of "cold," from the mucous membranes of the nasal organs to the lungs, and we have in such cases known one of the most eminent physicians of the country to declare, when examinations were made at this juncture,

that "catarrh had nothing to do with it." This but illustrates the fallibility of men, and we should never be surprised when confronted with any fresh testimony tending to confirm this truth.

The dry catarrh, while more aggravating, is less fatal, and life is more secure, and not as offensive either to friends or themselves, while other classes of this disease are offensive and more malignant. It is very obstinate, and yields to no treatment of a specific kind that we know of. The same general course should be pursued, however, as with dyspeptic consumptives. The entire medical fraternity are at their absolute wits' ends, so far as any specific is concerned, for this almost universal disease. We say universal, since it is within our knowledge to be largely true, though, while in a mild form, little heed is given it, and generally the party would deny its presence, even while more than half conscious that it might exist. In addition to a generous diet, fresh air, and other matters, of which we shall speak more in detail as we proceed, a nasal *douche* before retiring, of tepid water, with salt enough added to make a weak brine, as half a teaspoonful to a tumbler, will be in most instances of some benefit. Inhalation and nasal baths must be the specific means of reaching and alleviating this disease.

Thousands annually die of consumption springing out of this malady. Time, it would seem, must

discover to the race some more efficient remedy than is now known.

Cold, humid, and variable climates give rise to and feed this disease, and a change to an equable, warm, or a cool and dry temperature, is essential.

Where heart disease is complicated with consumption, a warm, dry climate is best; and in some cases, too, as where bronchitis exists in great disproportion to the amount of tubercular deposit and inflammation of the lungs, the climate of Florida during the winter would be more bland and agreeable than that of Minnesota, but each individual varies so much in constitutional character, that no positive rule can be laid down by which any one case can be judged. This comes within the province of the family physician.

We cannot too strongly urge upon the medical faculty, as well as the friends of the afflicted of whom we have written, that delays are dangerous. Early action on the first manifestations of lung troubles and tendencies is necessary if lives are to be saved. It is hard to turn from the beaten path and enter new, even when larger health is hoped for and needed, yet that should be resolutely done, though it were far better the confining and unhealthful course had not been originally entered upon.

CHAPTER VIII.

CAUSES OF CONSUMPTION.

Prevention better than cure.—Local causes of disease.—Our school system objectionable.—Dr. Bowditch's opinion.—Location of our homes important.—Damp soils prolific of lung troubles.—Bad ventilation.—Value of sunshine.—City girls and city life.—Fashionable society.—Tight lacing fatal to sound health.—Modern living.—The iron hand of fashion.

THE proverb that "an ounce of prevention is worth a pound of cure," has been almost totally ignored in its relation to the laws which govern health. It seems quite as essential, however, to examine into the cause of disease as it is to seek for remedies which, in many instances, can work but a temporary cure, so long as the cause is overlooked. One is but the sequence of the other; and, to remove the malady, or prevent its recurrence, they have but to remove the cause. This is freely admitted to be the right principle, yet, is it always the course pursued? Do not people mislead themselves much, and, instead of going to the root of difficulty, remain content with what must prove but a temporary restoration?

How often, for example, does the physician, when called to the patient suffering from a cold, inquire to see the shoes or boots of the invalid? Never; the thing is unheard of. Their questions in the direction of causes would not reach half way to the real goal which should be made the point of investigation. Not that the insufficient shoes or boots are going to have any part in the restoration of the invalid; but it may be shown, on examination, that they were the real cause of trouble, and, by a change, prevent in the future a similar attack, from that source at least. The same is true of half the diseases afflicting mankind; their prevention may be assured, to a great extent, by attention to the dictates of hygienic laws, which are no more or less than the laws of moderation and common sense, and not, as many suppose, the law of obligation to eat stale bread, or "cold huckleberry-pudding," all the balance of their lives, though this diet might be beneficial if ghost-seeing and spirit-rapping was determined upon.

Very many cases of fevers can be directly traced to some local cause, which should receive as much attention from the physician as does the patient, and either the one or the other promptly removed. Indeed, people must learn for themselves to investigate the laws regulating health, and thus be able, without the aid of any professional, to decide intelligently all of the more obvious questions.

It does, in this connection, seem that there is great want of judgment on the part of those having the direction of our public schools, in that there is so trifling attention given both the study and observance of the laws which control our existence. What is education without a sound body? what is life to the creature of broken health? and what is there which is more valuable and priceless to us? The answer is plain to all, and yet the whole advancing generation of boys and girls, beyond a mere inkling in physiology, a possible recollection of the number of bones in the human frame, and that common air is composed of two principal gases, they know of hygienic law practically nothing. Worthy pupils of incompetent pedagogues, who, not being required by the public to properly inform themselves with a full knowledge of these important studies, are perhaps in some measure excused for their shortcomings. Instead of the inculcation of these useful and more vital lessons of life, they are required to fritter away time and health over a French grammar, or other equally foolish study, which cannot, in a vast majority of cases, be of the least service to them. They had much better be at home making mud-pies (which, by the way, are about the only ones that ever ought to be made), or learning to bake wholesome bread, or even chasing butterflies in summer through the green fields, or braving the cold of winter by joining in some of the healthful out-of-door

find not a few of them in which he will trace to *overwork* in our schools the first springs of the malady.

“The result of all this school *training* is as certain as the day. Every child who goes through these modern processes must inevitably suffer, but not all alike. Some have one complaint, some another, and some, doubtless, finally escape unharmed. At times they only grow pale and thin under the process. But not a few go through to the exhibition, and, after working harder than ever for the two or three last weeks of the term, they gain the much-coveted prize only to break wholly down when it is taken. The stimulus of desire for success is gone. That has sustained them up to the last moment. Success having been accomplished, the victim finds, too late, that what he has been striving for is nothing, now that it is won, compared with the vitality lost and the seeds of disease sown.”

It is true that there are a very few schools in the country where physical culture receives, in connection with other duties, its due share of attention. We know, personally, of but one—the Howland Ladies' Seminary, at Union Springs, New York, and we understand, on the authority quoted above, that the Latin and High Schools of Boston are of this class. Our colleges, however, as a rule, seem as bad as the schools. Half the students who complete their course come out broken in health, and those

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who do not are about the toughest "horned cattle," as Horace Greeley says, that can be found.

Another important item involving the economy of life is the

LOCATION OF OUR HOMES,

which has received little or no consideration, judging from what one may observe who chooses to look about them. Circumstances entirely beyond the control of most people conspire to locate for them their places of abode, and when originally selected no regard was paid to sanitary laws, and the result many times has been the forfeiture of precious lives as a penalty.

Not till a very recent period has the character of the soil figured to so great an extent as is now conceded. It has been proved by statistics, both in New England and the mother country, that a heavy, wet soil is prolific of colds and consumption; while, on a warm, dry soil the latter disease is little found. If we stop to consider what has been written in the previous chapters on climate, and that it was stated that a cold, humid atmosphere, from whatever cause, coupled with variable temperature, was the chief occasion of consumption, we can the more easily understand why a wet soil would tend to produce this disease. Whether the dampness arises from excessive shade, or is inherent in the soil, which may be so situated as to receive the drainage water of more elevated surfaces contiguous,

is not material, so that it is the prevailing condition, thereby constantly exhaling cold vapors, which sow the seeds of death in many an unsuspecting household.

We cannot urge the importance of a right location better than to again quote from Dr. Bowditch what he once wrote with regard to the residence of two brothers whose healths were equally good, as was that of their wives, but one chose a home upon a dry, sandy soil, while the other settled upon a wet, cold plain—not remote from each other. “Large families were born under both roofs. Not one of the children born in the latter homestead escaped, whereas the other family remained healthy; and when, at the suggestion of a medical friend, who knew all the facts, * * * we visited the place for the purpose of thoroughly investigating them. * * * These two houses had nothing about them peculiarly noticeable by the passing stranger. They were situated in the same township, and within a very short distance one from the other, and yet scarcely any one in the village with whom we spoke on the subject agreed with us in our opinion that it was location alone, or chiefly that, which gave life or death to the inmates of the two homes.”

We suppose thousands must continue to pay the penalty of the faulty locations of those who first built, since it is difficult to persuade many to sever

the ties which bind them to their early homes, even though they are unhealthful, to say nothing of the expense to be incurred in making a change, yet those who have homesteads to establish encounter none of these drawbacks, and should exercise great care in making selection of a site for their dwellings.

A dry soil is indispensable to good health, and if it cannot be found as dry as wished for, it may be remedied by thorough underdraining. A sandy soil, the poorest or driest on the farm or lot, is the best point to erect a healthful home.

The habit of embowering the house with a dense growth of shrubs and trees, even where the soil is naturally dry, defeats the desired end, and provokes disease. There are many places made so cosy and attractive with these aids that, with persons of culture and taste, the tendency is to run into extremes, and, while they render their homes beautiful to the eye, they are fatal to life. A few shade-trees and shrubs properly distributed about the ground can be indulged, and in numbers quite adequate to give an air of grace and beauty to the home, while not endangering its inmates. They should stand at proper distances from the sides and roof, or not to constantly shadow them through the whole summer, but allow, instead, the caressing sunshine to have full, free play over them. Again, we have often entered dwellings where it seemed to be the study

is not material, so that it is the prevailing condition, thereby constantly exhaling cold vapors, which sow the seeds of death in many an unsuspecting household.

We cannot urge the importance of a right location better than to again quote from Dr. Bowditch what he once wrote with regard to the residence of two brothers whose healths were equally good, as was that of their wives, but one chose a home upon a dry, sandy soil, while the other settled upon a wet, cold plain—not remote from each other. “Large families were born under both roofs. Not one of the children born in the latter homestead escaped, whereas the other family remained healthy; and when, at the suggestion of a medical friend, who knew all the facts, * * * we visited the place for the purpose of thoroughly investigating them. * * * These two houses had nothing about them peculiarly noticeable by the passing stranger. They were situated in the same township, and within a very short distance one from the other, and yet scarcely any one in the village with whom we spoke on the subject agreed with us in our opinion that it was location alone, or chiefly that, which gave life or death to the inmates of the two homes.”

We suppose thousands must continue to pay the penalty of the faulty locations of those who first built, since it is difficult to persuade many to sever

the ties which bind them to their early homes, even though they are unhealthful, to say nothing of the expense to be incurred in making a change, yet those who have homesteads to establish encounter none of these drawbacks, and should exercise great care in making selection of a site for their dwellings.

A dry soil is indispensable to good health, and if it cannot be found as dry as wished for, it may be remedied by thorough underdraining. A sandy soil, the poorest or dryest on the farm or lot, is the best point to erect a healthful home.

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of the good, ambitious housewife to shut out all the light, and shut in—of course, unconsciously—all the death which comes of dampness and dark, only so that her carpets are kept bright and shining for some—gossip's tongue.

Sunlight has come to be, of late years, one of the great remedies, and sun-baths are now duly administered in establishments erected for that purpose, and there can be no doubt of their efficacy in giving health and strength to all whose habits of life prevent their exercise in the open air.

Next to a proper location, by which health is to be promoted, is

VENTILATION,

and this covers a multitude of minor matters, but we have only room for considering the subject in its broader aspect.

In olden times ample ventilation was secured through the massive open chimneys, which, with their generous hearthstones, was such a distinguishing and healthful feature of the homes of our ancestors. They were, perhaps, "a blessing in disguise," but that they were a real blessing there is no doubt. Then, too, they were the grand altars of the family, around which the sweetest recollections of childhood and youth cluster, as does the ivy to the walls of old-time buildings, making them, though rude and rough, to memory most dear.

In place of these natural escapes for foul, and the

admission of fresh air, we have absolutely nothing in the present day to take its place. On the contrary, air-tight stoves and air-tight furnaces have supplemented the cheerful blaze of the fireplace, and in lieu of fresh air, a great amount of poisonous gases are emitted, which stupefy and promote disease. Especially is this the case where the fuel used is any of the coals, instead of wood. The most deleterious of coals is the anthracite. Its heat is scorching and drying beyond any other, and the gases are more subtle and pernicious, excepting, possibly, charcoal, which, however, is not used as fuel to any extent.

These air-tight coal stoves, such as are in ordinary use, are the worst of all, since their name gives confidence to the public, who do not consider that, while they have the merit of "keeping the fire through the night," they do not keep the gases within. They are sure to creep through the apertures, or, if barred there, will escape through the iron itself, and it need not be very much in quantity to prove offensive to people with delicate lungs or in a debilitated state of the system. The strong and well will scout these opinions doubtless, and hold them of little value, and to them it is not of so much consequence whether they observe strictly the rules which govern health or no, their robust constitutions (thanks to their parents, who did observe these rules, either accidentally or purposely) will carry them along,

doubtless, to a ripe old age ; but their children are to be reared in health, and the fact of vigorous parentage may not, in their cases, where carelessness prevails, guarantee vigorous lives ; and, while the fathers and mothers may escape from the ill effects of the vitiated atmosphere of their apartments by exercise in the open air, their children cannot. And it is well known that the children, in these cases, die one after another, the result of poor ventilation or unhealthful location, or both combined, while the parents wonder what the cause can be, ascribing it to all things but the right.

Everything about our homes should be subjective to the one central idea of *health*. Things of beauty or luxury, whether in or around the dwelling, should, if on close scrutiny they are found prejudicial, be at once removed.

The family sitting-room, if no other in the house, ought to be warmed by means of a wood fire if a stove is used, yet a grate is far better, and is the nearest approach to the old-fashioned fireplace attainable in these times. A flue cut in the chimney near the ceiling, with a register affixed, will, where stoves or furnaces are used, be of service, and are quite easily and inexpensively constructed. The windows of sleeping-rooms should be so made that the top sash can be as readily lowered as the bottom one raised, and at night the former should be left down sufficient for the free admission of fresh

and the escape of foul air, but it ought not to draw across the sleeper. Night air is not as objectionable as the confined air of unventilated rooms. Invalids should, however, avoid exposure to it as much as possible, since when out in it, it envelops the whole person, and the chill and humidity may work serious injury.

The old saw, that "early to bed and early to rise, makes people healthy, wealthy, and wise," is deserving of more consideration than is accorded it. Take any city-bred girl, who has been accustomed to late hours and the excitement of entertainments and parties, and who, by these unhealthful and killing rounds of so-called pleasure, has become emaciated and prematurely old, and place her in a well-regulated home,—the country is by far the best, where early retirement is a rule, with a wholesome diet,—and she will in a few weeks show a marked improvement. Mrs. Stowe relates a very interesting story of a city-girl who had all to gratify her that fond parents could procure, and, though constitutionally strong, this hothouse, fashionable life had begun to undermine her general health, and having exhausted the skill of the regular physician, her condition became so alarming that other counsel was sought; and this new disciple of Esculapius was a shrewd, honest man, and went to get at the root of difficulties. He saw at a glance that the patient's disease was born wholly of *fashion*. He found her waist so tightly

laced as to admit of little room for full and free respiration; this, with late hours and unwholesome food, was doing its work. Being asked to prescribe, he first cut loose the stays which bound her; then, ordering suitable shoes and apparel, gave directions for her immediate removal to the country, where she was to first rest and lounge in the sunshine, and as health returned, to romp and frolick in the open fields and join in the merry glees of country life. With feelings akin to those coming of great sacrifices, the commands were followed, and this frail, dying girl was, in one brief summer, so far restored as that the glow of her cheeks and the sparkle of her eyes rivalled those of the farmer's fair daughter whose companion she had been.

City life is exceedingly destructive to young people, even when considered aside from all undue excitements, indecorous habits, and improprieties. The custom of late hours, night air, and the vitiated air of apartments where companies assemble together, with the liability to contract colds by being detained in draughts, or from want of sufficient protection while returning from social assemblies; all these things destroy annually a great army of young people, who either do not think of consequences or else willfully neglect their lives to pay homage to fashion—the curse of the world.

We cannot think all parents wholly neglectful in teaching their children how to preserve health, and

much of responsibility must rest with the young; yet by far the larger portion of parents are so flattered by alluring admirers, and led by the requirements and glamor of foolish fashion, that they seem, to the cool observer, to fairly dig and garland the premature graves of their loved ones.

How we wish we might impress one mother who worships at this abominable shrine, set up heretofore—but we now hope forever cast down to make room for an era of good sense and womanly delicacy—in Paris, by either a dissolute court, or, as we have often been informed, by the *nymphs du pavé*, who seek to attract by tricks of style till they have come to rule the whole of their sex, or such portions as have not the moral courage to mark out an independent course. The violation of health, contortions of the body, and other absurdities, aside from the vast expense entailed upon the whole people, are perfectly astounding and outrageous beyond belief. Let us examine a moment and see if we are presuming. Granting that every lady in the land expends on an average of but ten dollars each year for the fashionable make-up of her wardrobe; that this mite goes for style, and necessary little etceteras growing out of it, and not in any way for the material itself, which is really the mountain of difficulty. Now, if there are twenty millions of women in our country, it would give the sum of two hundred millions of dollars annually expended for

style. What a noble charity this would establish every recurring year. What a relief to pauperism it would form, and that too without the sacrifice of anything but "style." What a relief to struggling, disheartened men, whose lives are those of slaves, and families who pinch and starve themselves that they may possess the magical key to fashionable society! But what is fashionable society that it should have such charms for common and honest people? We give in answer what was given us by one who had had for many years access to it. He said, "Struggle to avoid it as the worst of calamities." It had swept him and his family from a position of comparative affluence to one of misfortune and distress. Fashion is the parent of both—"cussedness" and consumption.

We know some young ladies are personally disgusted with all this "fuss and feathers," who at the same time insist that, if they did not follow the lead of "society" they would be thrown in the background, as at most entertainments those who have carefully and elaborately arrayed themselves receive the lion's share of attention and compliment from the opposite sex, whose good opinion and company they wish to share. While there is more of truth in this response than most gentlemen are willing at first to admit, yet, observant people have ever noted the fact that, notwithstanding these fashionable and polite addresses at public assemblies between the beaux and butter-

flies, the end of the levee usually terminates the hobnobbing. The "gay ladie" has had, quite likely, her hour of triumph over her more modest, quiet, and unassuming rival, now in the background, but whom—when the young man is ready to proffer his hand and fortune—is most likely to be led to the front, blushing with her becoming and well-deserved honors, leaving the doting mothers, with their *dear* daughters, to reflect on the "strange ways of you men."

If the world sees, it does not fully believe what it sees, else a change would surely come. The fact is, while men, especially the young men, delight to do *honor* to these devotees of the milliner and mantua-maker, they cannot—those who have a fair share of good sense—afford to *marry* them. Their means, their prospects, and their happiness forbid it, and they are right in this conclusion. They prefer to unite their lives with some equally good, and usually more sensible and healthful girl, but of, perhaps, no special prospects or position in society. This decision is certainly founded in wisdom. They are forever relieved from that constant strain on their pride, and the consequent drain on their purse. Their style of living may, in this latter case, be squared, without jar or reproach, to their real revenues, and life be to them worth the living, while they gradually and lovingly lay aside, for any future exigency, something each year on which, in old age or

disaster, they may confidently lean, and which, though it may not be great, yet shall, in a reasonable life, be sufficient to tide them to, and “over the river.”

Everything, of course, has some exceptions; and where the fashionable lady can sustain the family pride and family coach both at one and the same time, why, then, our remarks and objections have little weight. Yet, in what we have written may be found the real cause of the increase of bachelors and old maids in society.

There are a few noble souls who rise above the bondage of their sex, and follow the dictates of their own consciences in dress as in other matters. This class embraces usually the very wealthy and the very learned people who compose the polite and refined circles, as distinguished from the flippant and fashionable ones. All honor to them. Their example is great, and furnishes the chief hope of any possible reform.

Some ask, what, indeed, shall we do if we discard all fashion? Our reply is, to do as the Quakers do. They certainly look quite as presentable and pretty in their “plain clothes” as do any other class of society. But I hear the answer: “Yes, and is not their style a *fashion*?” We grant that it is, but at the same time insist that it is both a sensible, economical, and becoming one; and such a fashion—a fashion of common sense—is what we indorse,

having not the least objection to that sort. Like the old-time mode of cutting boys' hair by use of a bowl clapped over the head, it was a fashion, but a very simple, inexpensive, and proper one enough, considering the circumstances. Now they must have the assistance of a professional artist. Singular how one extreme follows another.

Not until quite a recent date were we inclined to advocate "women's rights," which is but another name—as modernly interpreted—for the ballot. Now we are persuaded that it would be wise for the States to concede this, and thereby open a new channel to them for thought, at once weakening their hold on fashion, and enlarging their views of life and its requirements. Good to the race, it would seem, must come of any change whereby the rising generation shall have less of fashion and its attendant evils, and more of health, with its accompanying blessings.

How few of perfectly healthy girls do we see among all those with whom we are each severally acquainted. Tight lacing, began in early childhood, is one of the chief of evils. You ask a girl of twelve years if she is not too tightly dressed, and the reply is "no;" and the mother is sure to argue that if the girl does not complain it is none of the father's business to meddle. The fact is, the child has been gradually brought to that state of unconsciousness of any discomfort by having been subjected to this

abominable process from a very tender age, and being continued each year, the waist is scarce half the natural size it should have been at womanhood. Take a country girl who has grown up free from this practice, and has a well-developed frame, and put on her the harness of her fashionable sister, and draw it to the point the latter is accustomed to wear it, and you shall see whether there is any wincing or no. The argument of these unreasoning mothers is that of the Chinese, who dwarf their children's feet by beginning at an early period, and, doubtless, if these youths were similarly questioned, they, too, would complain of no inconvenience.

In the management and care of children, fond parents seem, in these later years, little else than a bundle of absurdities. For instance, take children of from three to ten years, and you shall see, in a majority of cases, when dressed for the street, their backs laden with fold on fold of the warmest clothing, while their poor knees are both bare and blue.

Ah ! we forget, perhaps, that the physician and undertaker must live ; and then the army of nurses and others, too, are to be provided for, quite as the fashionable lady would make reply to any *impertinence* in matters of her dress, that it kept an army of sewing-girls employed who would otherwise be left to starve !

One of our most vigorous writers, treating this subject, says :—

“Showy wardrobe, excessive work with the needle, where it is done to gratify a taste for display, or morbid fancy for exquisite work, is a crime. Shoulders are bent, spines are curved, the blood, lacking its supplies of oxygen, loses vitality and creeps sluggishly through the veins, carrying no vivid color to the cheek and lips, giving no activity to the brain, no fire to the eye. Let women throw away their fancy work, dispense to a degree with ruffles and tucks, and, in a dress that will admit of a long breath, walk in the clear bracing air.

“Mothers should begin early to lay the foundations of health. Children should have plenty of vigorous, joyous exercise out of doors. They should have romping, rollicking fun every day, at the same time giving exercise to every part of the body, and a healthy tone to the spirits. The body and soul are so intimately blended that exercise for the one is of little value when the other is repressed. Thus the limbs will become well knit and beautifully rounded, the flesh will be firm and rosy, and the whole frame will be vigorous and elastic—vital to the finger tips. Better that our youth should have a healthy *physique*, even if they cannot read before they are ten years old, as in this case they would soon overtake and outstrip the pale, narrow-chested child who is the wonder of the nursery and the Sunday-school. Children are animals that are to be made the most of. Give them ample pasturage, and let

them be as free as is consistent with the discipline they need ; keep the girls out of corsets and tight shoes, give them plain food, fresh air, and plenty of sleep."

Nothing invites disease so much as the present style of living among the well-to-do people. Nearly everything tends among this class to deteriorate general health, and, since their numbers have within the last decade greatly increased, the influence on the country must be markedly detrimental, and, but for the steady flow of vitalizing blood from the Old World, the whole Yankee race would ere long, inevitably disappear.

We have dwelt in this chapter at considerable length on the importance of right training and education of the young, and especially of girls, though no more than the subject seems to demand. Boys are naturally more out of doors, since their love of out-of-door life is greater than that of girls, and their sports all lead them into the open air, and by this means they more easily correct the constitutional and natural tendencies to disease, if any there be. Then, too, the iron hand of fashion has not fastened itself so relentlessly upon them as to dwarf their bodies and warp their souls, as it has in some degree the gentler and better and more tender half of mankind, to whom the larger share of this chapter seems the more directly to apply.

CHAPTER IX.

HINTS TO INVALIDS AND OTHERS.

Indiscretions.—Care of themselves.—Singular effect of consumption on mind.—How to dress.—Absurdities of dress.—Diet.—Habits of people.—How English people eat.—What consumptives should eat.—Things to be remembered.—The vanity of the race.—Pork an objectionable article of diet.—Characteristics of the South.—Regularity in eating.—The use of ardent spirits by invalids.—The necessity of exercise.—The country the best place to train children.—Examples in high quarters.—Sleep the best physician.—Ventilation.—Damp rooms.—How to bathe.

IT matters not what virtues climates may possess, if certain fundamental laws regulating health are to be disregarded by the invalid. The robust and strong may, perhaps, for a season violate these laws with impunity; but, even in their cases, every serious indiscretion, if not immediately felt, is as a draft on them, bearing some future date, sure of presentation, while the payment is absolute. It may be five, fifteen, or fifty years ere the boomerang of indiscretion returns, but come it will. Invalids will need to watch and guard against all pernicious habits, and to forego doing many things which they

were accustomed to do while in health, but which under the altered circumstances are extremely injurious.

All pulmonic patients will, while taking counsel of some physician, do well to remember that their cases rest largely in their own hands; indeed, more depends on their own care of themselves than on the efficacy of any system of medicine. Lung disease is usually of a most flattering character, and its influence on the mind differs from that of any other, in that the patient is lulled into a serene and hopeful condition. This sense of security attends no other ill to the same extent. It is perhaps fortunate that such is the case, since, in many instances, there would be little vantage ground on which to rally. Still, while this peculiarity seems to be and is an advantage, there is another aspect of it which is quite as damaging, viz., the neglect and inattention into which the patient is, too often, betrayed by this fancied security; frequently resulting in fatal consequences. It is, again, a most singular fact that, while the consumptives are thus blinded to their real danger, they become, quite as readily as other people, alarmed concerning friends who happen to be similarly afflicted; and this should serve as a caution against the companionship of invalids. Indeed, the influence of mind upon mind is so positive and subtle as to render it important that the invalid's surroundings be made as cheerful and bright as pos-

sible. The sunshine of good company rivals that of the day in restorative power.

Among the more essential matters in the way of hints to invalids, left for brief elaboration in this chapter, is that of

DRESS.

This should be easy-fitting and comfortable. Woollen under-clothing is required during nine months of the year in our climate; and, except it should disagree with the person, ought to be worn. It carries off the exhalations better, leaving the skin dryer and less liable to colds. The weight of the material can be varied to suit the changing seasons. For the summer months a mixed article, of wool and cotton, is desirable; but in no case should a change be made from all wool to all cotton. It is better to continue in the use of wool altogether than to commit this error. It is not a hardship to wear woollen through the hottest season of the year. Half of all our seamen do it, even while sailing in the tropics, and both their health and comfort is undoubtedly increased by it. It is, indeed, essential for many patients to wear it as a guard to some extent against summer complaints. If any inconvenience of heat is experienced at mid-day, it is better to change the outside clothing, adjusting that to the thermometer, rather than to disturb one's underwear. There are some sensitive-skinned people whom, we know, cannot endure the contact of

flannel; such can, however, usually wear, without inconvenience, the mixed goods—especially if it be washed once or twice before it is used.

It is important that all the clothing worn through the day should at night be laid aside, and a night-dress substituted, which should be a flannel wrapper coming nearly or quite to the feet. Changes of underwear ought to be made once each week, and special care taken that it be well aired and dried.

Never go without a chest protector. Considerable relief is afforded by the use of this convenient and inexpensive article. Every old asthmatic appreciates their value, and we have known such people, years ago, who wore them. They warm the chest, and thereby loosen and soothe a cough. They may be of any woollen material almost, so that it is soft and warm. The best article is a piece of buckskin, lined upon one side with a single thickness of flannel made in the form and size of a dinner plate, with a piece clipped out to accommodate the throat; and to the corners of the clipping attach pieces of tape. This tied around the neck and over the under-clothing will prove not only a great relief, but will help the system to better resist a cold; and, for gentlemen, it ought to be in constant use, whether well or ill, as it serves to equalize the clothing over the chest, which is now partially exposed by the fashion of their vests. This invaluable little article can be obtained, when there are no loving fingers to

make it, at almost any city drug-store. By wearing it in the manner indicated, it will not require to be washed at all.

The absurdities and crimes of fashion in dress we have discussed elsewhere, and only stop now to say that they should be laid aside by the invalid. Tight lacing, tight collars, knee bands and garters, and thin, tight shoes and boots, are not only foolish, but incompatible with high health. Great good sense has, however, characterized both men and women within the last few years in regard to the covering for the feet. Every person who has occasion (and all should have) to be out of doors in cold and even wet weather, ought to be provided with strong thick-soled boots or shoes, large enough to admit a patent insole, which will keep the feet dry, and at night this should be removed and dried. The security from colds is almost assured whenever this precaution is taken ; at least they are a great preventive of colds, and they give, in addition, a sense of solid comfort beyond that which is derived from anything else, save, perhaps, a warm fire on a cold day, or a generous bank account.

They should be an easy fit, as well as thick-soled ; and, without this virtue, the other is rendered null. Indeed, better have loose thin boots or shoes, with holes in them even, than *tight* thick ones. But they can and should possess both of the characteristics named. It is safe to say that any consumptive who

has neither courage nor sense enough to adopt the kind recommended, might as well be given over at once, and without further ado.

Persons whose health is so perfect that they can for the time indulge and endure anything, and who cannot be said to have had any experimental knowledge of lame backs, sides, or weak stomachs, and who do not know practically whether they have any such members at all or not, will not be expected, at present, to pay any regard to what we have to offer under the head of

DIET.

The other, and, unfortunately, most numerous class, know how sadly they have fallen from their first estate. There was a time with them when they never dreamed that their stomachs were not as strong as a cider-mill, and could grind anything and everything which their greedy natures and careless habits desired. There is no other living animal, except it be the hog, that can eat and tolerate just the same variety of materials, cooked and raw, as man. Their tastes and habits are strikingly alike, it must be confessed, and their ends are not unlike; both die untimely deaths, with this difference, one is in due time killed, while the other, in equally due time, usually kills himself, the advantage being in favor of the porker, since his career, if brief, is, also, to the limit, blissful.

The habits of men are a curious mixture of sense

and the want of it. Endowed with some of the highest attributes, and yet forgetting that they are anything beyond the veriest machines. They who leap from docks and bridges are not the only suicides. These shock the world, and are not uncommonly denied the last kindly offices of the church, while the slower suicides are borne triumphantly from the chancel within to that without—all turning on methods, and that is, indeed, important. Method in living should receive our earliest and best attention. All need to become good *methodists*, especially in some senses of that word.

The English men and women are the most systematic in their habits of living; and, as a natural result, they are remarkably robust. They take ample time in which to eat. An hour at dinner is as little time as they customarily allow, while those who can, often devote much more. They eat slowly, and talk a great deal, and laugh much, and by the time they have done they are fairly red in the face, and keep so pretty much all the time; and it is as healthy a sign as one can hang out. Good digestion waits on appetite with them, and they grow stout and formidable. They not only eat slow, but they know what to eat and what makes good blood. Suppose every Englishman could be sent into France and obliged to live on French cooking; does any one suppose they would remain the same people they now are? Not a bit of it. Take from John

Bull his roast beef, and mode of eating it, and you change the character of the race inside of a century. They must have their favorite dish, and about as often as a friend of ours, Dr. M——, who, by the way, is a good type of an Englishman, and enjoys the things of this world much more than is common with Americans. On asking M—— how often he indulged in roast beef, he replied, that about three hundred and sixty-five times in the year was his rule! Invalids may be assured it was not a bad one. Of course, he took a great deal of active exercise, seldom using a horse while engaged in the practice of his profession.

Consumptives, and those who are generally debilitated and who need a fresh stock of good blood, cannot do better than confine themselves, so far as meats are concerned, to beef and mutton. The latter should be well cooked, while the former ought to be eaten rare done. If it is at first distasteful in this manner, proceed by degrees, and by-and-by it will grow in favor; but commence with it rare at the outset, when possible. Whether roasted or broiled, beef should not be cooked as to destroy all its natural color. Let the inside show some of the blood, the more the better, and the quicker it is assimilated to the needs of the system. General Rawlins, the late secretary of war, died of consumption, but his life was prolonged many months by the use of rare and even raw beef. He came to

like it better raw than in any other way. Once a day is, perhaps, as often as may be required; much, however, depends on the amount of exercise taken. Wild game is likewise good, especially venison, and where that can be had, beef and mutton may be dispensed with. Fish and eggs furnish a variety to the invalid's diet, and such vegetables as are liked may be indulged, of course. Never eat but of one kind of meat at any one meal, and not over two kinds of vegetables, with wholesome, fresh bread (Graham preferred), and the coarser the better. Insist on having coarse bread; let it be made of unbolted meal. As for drinks, a single cup of very weak tea or coffee, diluted chiefly with milk, will not harm. A glass of milk is better in warm weather, if it agrees. Let water alone, except it is that which the system has become familiarized with; then, half a glass is preferable to a larger quantity at meals. Sousing the stomach at meal-time with a cold *douche* is only harmful. After the food has had time to digest and pass out of the stomach, then, if one is a great water-drinker, take a glass, or so much of a glass as you think is required, and it will be of benefit. Make the heartiest meal come at noon, and eat a light supper at night, using bread and butter for the most part.

Things to be remembered and observed in eating, are slowness and thorough mastication; never wash your food down with any drink. Talk and laugh,

taking as much time to do this as you do to eat. A noted humorist says that "every time a man laughs he takes a kink out of the chain of life, and thus lengthens it." That is true philosophy, and it is little understood by our nervous, rushing people. We grin and snicker enough, at ourselves and others, but downright hearty laughter is a stranger to the most of us. It should be cultivated till, in an honest way, it supplants, at least, the universal snicker. There is both comfort and health in rousing peals of laughter.

Things to be avoided in eating, are hot, fresh baked breads of all kinds; also avoid all manner of pies as you would a pestilence, likewise cakes, of every description; they are the crowning curse. Women will make it and children will cry for it, probably, for all the generations to come, as they have in the past. But more truthful epitaphs should be inscribed over them than is now done. It is strange how fashion rules in diet as in dress. Why, the Koohinoor diamond of Victoria is not more valued than is a steady supply of poundcake by most of women and children. We know of a family who make it a boast that *they*, when young, had *all they wanted*; which either implies their mother to have been unwisely indulgent, or else the children to have been over-clamorous. It certainly does not imply wealth, and, least of all, culture, for the poorest families have usually the largest display of these things, while those with

enlarged means and sense dispense with them out of good judgment.

Travelling on the cars, a short time since, we had for a companion a shrewd Yankee who had the honor to be postmaster of his city, and at the same time was engaged in the boot and shoe trade ; one of those stirring men who, if he did not possess genius, had its nearest kin—activity, and illustrated the fact that a man *might* do two things well at one and the same time. He gave us samples of human nature which is quite apropos to the general subject. In discussing the eccentricities of merchandising, he said that usually wealthy customers entering his store would ask to see his cheaper class of boots, such as would do service, “honest material, but not the most expensive,” and from that class would make their selections ; but, whenever parties entered whose means were known to him to be limited, and yet whose “pride of family” and personal vanity were in increased ratio to their decreased capital, he never ventured even to suggest the class of goods taken by the wealthy, lest offense be given. His rule was to show to such his very best goods first. They wished to display “a notch above their betters.” And so with the cake question. Some of even the poorest families of New Englanders doubtless eat more of this material than does the Royal family of England, if it could but be known.

There remains yet another article of food to be

proscribed. We refer to the pork question. All ought to be good Jews on this subject. Their prohibition is, we believe, founded on the intrinsic unhealthfulness of the thing itself. Its use is universal in this country, and in the South it forms the chief meat diet. This latter fact comes of their mode of agriculture more than original preference. They devoted all labor to cotton growing, and had their meat and grain to buy. The question with the planter in laying in his supplies was what would go farthest, at a given price, as food for his slaves. Bacon and flour were always found to answer the economic query best. The West furnished bountiful supplies, and readily floated these products to a market, where competition was not only not thought of, but entirely out of the question. Cattle and sheep raising (outside of Texas) had no growth or encouragement among them. The planters soon fell into the habit of using bacon on their own tables, and the result is, it has continued to form the staple article for all classes there for several generations. The darkies have rather flourished upon it, while the whites have suffered greatly in consequence.

Its use undeniably produces scrofula, salt-rheum, tetter, ringworm, humors in the blood, rheumed eyes, enlarged glands, sore eyes, and lastly, cancer. Almost any community in the South will afford several examples of one or all of these diseases, and all directly traceable to the excessive use of salt pork.

In a somewhat sparsely settled neighborhood near Central Georgia, known as Social Circle, a dozen cases of cancer alone can, in one form or another, be found, and that is one of the most salubrious sections in all the southern country.

They have become so enamored of "hog and hominy," that they are fairly superstitious or foolish regarding the use of some other kinds of meat. For instance, mutton, in any form, they are disgusted with as a rule. We tried to get at the reason while sojourning there, but never fairly succeeded, though the impression was, plainly, that they did not think it proper food for white people anyway, and then the "odor was so disgusting," and altogether it was only fit for "trash folks." We scarce hope to be believed when we state, that we have seen young ladies refuse to sit at the table where this dish was served, and served, too, out of compliment to their guests from the North.

This same feeling was largely shared by the colored people, and, while it was no infrequent thing for the "smoke-house"—where the bacon was kept—to be broken open in ante-war times, taking the risk of detection and dogs, it was almost an unheard-of occurrence that a sheep was stolen. They roamed, what few there were, at will and unharmed, except by dogs and wild beasts—the special benefit accruing to their owners being simply the wool. During and since the war, matters have been undergoing a

change, and sheep raising is receiving more attention, and beginning to be valued as an article of food. Still, during weeks last winter, the Atlanta markets did not show a single carcass of mutton, notwithstanding the great extent of country tributary to it by means of her railways.

This change above referred to, while of slow growth, is, in part, owing to the example our troops set, the experience of their prisoners, their straitened circumstances, and lastly, to the infusion of Northern society among them.

While there are undoubtedly tenfold more of those diseases in the South consequent on the use of pork, than what there is at the North, yet its consumption is vastly in excess with us of what it should be. There is no doubt of this. Scrofula, salt-rheum, and ophthalmia, are among the chief developments at the North. At the North greater and better variety of food among all classes is in use, to say nothing of better cooking, which wards off some of the worst results.

The natural tendency is to greater use of pork in the more northern than in the Southern States, since the climate would seem to call for it; but we have shown its use at the South to be the result of circumstances more than of *original* preference and probable inclination, since all peoples of low latitudes, of a high standard of civilization, elect a lighter diet than those of cooler climates.

There are some who declaim against the use of any and all kinds of meat for food, and advocate a purely vegetable diet. There is much that can be said in its favor, and it ought, with fruits, to form at least two of the three daily meals. The system would be in better tone, and the mind as well. But there are extremes in all things, and these sometimes govern the conduct of men. A happy medium is usually the best, and for our climate, we believe the use of the right kinds of meat to be not only healthful but eminently proper. The natural law aids to this conclusion. We see the people of the tropics indulging largely in fruit, which an allwise Providence has placed there and adapted to their wants; again, at the poles the inhabitants live almost wholly on the fat of animals—a half-dozen tallow candles being eaten at a meal, when supplied by strangers. The intense cold requires this heavy fuel to supply the needed heat and comfort. What would an exclusive vegetable diet be worth to them, exposed as they are? With us, lying between the two extremes, with a climate and country abounding in both fruits and animals, with seasons of cold and heat in nearly equal extremes, it seems quite rational that a mixed diet, regulated by common-sense rules, is the best. Certainly the highest civilization to which man has yet attained is found in the temperate zones, where neither the one nor the other extreme in diet has obtained.

A manifest advantage and improvement in general health can, however, be effected by paying a more enlightened regard to those things whereof we dine. People with gluttonish inclinations can easily and do make themselves sick while subsisting on an entirely fruit diet ; hence, if discretion is needed in the use of the simplest articles of food, of course it cannot be dispensed with while indulging in other sorts.

But, in a volume of this character, we cannot amplify the details of this very interesting and important topic to that extent we could wish. Suffice it to say, that so far as pork is concerned, we abjure all to leave it severely alone. There is a variety of other meats great enough, from which all may choose, and there are no good elements inherent in pork which cannot be supplied in other meats, or by the free use of good fresh butter, which is at all times a much better *fuel* for the system than pork.

Regularity in eating is highly essential, and too much stress cannot be placed upon this injunction to the sick. It is quite as important to those in health who would remain so ; but then, few in health believe that, or if they do, their habits do not conform to their belief. The duties of life should conform to the laws of health, and where there is any conflict, shove duties overboard always.

Indigestion is the result of irregular, hasty, or unwholesome meals, and likewise meals in quantity beyond that required by genuine hunger and health.

It is the mother of many evils, some one of which will be sure to visit, in time, all who violate themselves as above indicated.

Many there are who, troubled with a cough, sore throat, and general debility, think they have the consumption, whereas it is, at the outset, nothing but indigestion. They will go on eating heartily, and continue their pie and cake, these being so pleasant to the palate; they say, "one piece will not do harm," "one swallow never made a summer," and thus they continue till complete prostration takes possession of them.

The use of stimulants at or after a meal may be done with advantage in some cases, but it should only be taken when the physician so advises. We have heard of consumption being cured by the free use of whisky; but should the habit of using it become an uncontrolled one, we question whether the life of the individual is worth the saving at this cost to community and friends. Some of the most eminent among the faculty recommend it, while others do not. When cod-liver oil is freely used, a spoonful of whisky ought, perhaps, to accompany it. If cream, butter, or the fat of mutton or beef be freely eaten at the noon or morning meal, and they are about as useful as the oil itself, stimulants are not so much needed, except that of

EXERCISE,

which is really one of the medicines most needed by

consumptives, dyspeptics, and hosts of others who are complaining. A daily dose of the saw-horse or wash-tub isn't bad for weak lungs and bodies, or for strong ones who wish to continue thus. Take a thoroughly well person, accustomed to an active, out-of-door life, shut them up and confine them to a bed, and a tolerable invalid will soon be the result. The converse of this holds good, namely, take an invalid who is able to walk about the house, but feeble in spirit and body, if exercised daily out of doors, a gradual return to health is apt to follow. The strong, to continue the growth of their powers, must give themselves constant practice. The story of the man who commenced to lift the calf, and continued the task daily till after it had grown to be an ox, illustrates this. Moderate and constant labor is the law of both life and health.

There are two classes who need counselling—those who overwork either mind or body or both, and there are many such, especially among those who conduct the multitude of our public journals. No profession is so exacting or exhausting as is theirs, or so generally thankless, and none so greatly influential for good or evil. These classes are, however, small compared with those who die for the want of a proper amount of physical exercise.

The weak-lunged portion of the world must have physical exercise out of doors, or they must die. There is hope for them if they will but consent to

labor in the open air. Those who cannot hold a plow and hoe corn, should jolt themselves on the back of a horse at a good round trot. If that is too much, in their debilitated condition, canter the animal; but if only a walking gait can be endured, why, hitch the horse in the stall and go on foot. Go briskly—get some errands to do which require to be done daily; take a contract to drive the mail out into the country, or, if no business can be had, ride on horseback to the mountains, spending the whole season in the going and returning. Do no studying or letter-writing by the way, and especially none to lady-loves. It will do little good to send the body off on a health trip, and have, meanwhile, the mental arm around your sweetheart. And it works against your recovery even worse when you are situated so as to substitute these mental for real flirtations. This does not so much apply to married men. They who have wives or husbands would be the better of their company and care.

Invalids who cannot travel, either at home or elsewhere, in consequence of weakness, should sit in the open air in some sheltered corner of the verandah, or of their room, and bathe in the light and sunshine, being careful to avoid all draughts.

A young man was just starting out in business. He was to leave his home in New England to engage in active life in one of the large cities situate on Lake Erie. He had bidden his childhood's

home his first adieu, and meeting with a friend, sought some counsel ; this friend, at the close of a somewhat lengthy interview, and as the sum of all he had uttered, said : that he should remember to practice three things, if he would have his efforts crowned with success, namely, the first was *Perseverance*,—the second was *Perseverance*, and the third was *Perseverance*. So it is with pulmonic patients : if they would recover, aside from the aids of diet, dress, and all the other etceteras, they must first and all the time continue to *Exercise*—EXERCISE—EXERCISE the body in the open air.

The distinguished Dr. Willard Parker once said to us that he put a consumptive on the back of a horse at his office-door in New York, and told him to ride for his life. He did ride for his life, and, after a six months' journey of about two thousand miles, having traversed the Central States, he returned with the assurance of his physician that he had overcome his disease.

There is often criminal fault in parents about the matter of exercise. They who are in affluent circumstances, and others who would be thought affluent ; and again, that class (and, we are sorry to say, it is a large one) who are so very tender of their children, and whose mothers do all their own household labor, only so that their daughters may be the admiration of a ball-room, or else through fear they will "get sick" if they put their hands to any-

thing which has kept their mothers so strong and well.

If parents did their whole duty, they would place the boys upon the farm, where they might grow strong and lay well the foundations of life, while the girls should bear a hand at making as well as eating bread. The art of cooking is a science, by the way, very little understood, and there is scope and verge enough for any ordinary genius, and as noble a service to mankind may be accomplished by its mastery as any that comes within the pale of human life.

Health seems almost ignored in these later days by parents, so far as the training of their children is concerned. Their overweening pride and love blinds them to what is their true duty. They feel it would be so trying for their "dear boy" to do any kind of manual labor, and it is so bad that his delicate hands should be soiled and hardened by any toil, that they would deny themselves of even the necessaries of life in order their fair-haired boy may be thought such a "nice young man," and so "genteel." Their judgment, however, is never in error with regard to some of the neighborhood "rascallions." Their heads are perfectly level on the question of "those rowdy boys." Their advice is as sound as it is free. They can predict with greater accuracy than can any of the second-sight-seers as to the ultimate end of these embryo ladies'

men, good-for-nothings, sharpers, spendthrifts, and paupers. They know the process full well whereby these boys can be transformed into strong, honest, enterprising, and useful citizens. They do not forget, either, though many would but for an occasional gibe from some envious Mrs. Grundy, that both they and their husbands were the children of obscurity and poverty; which, rather than being any dishonor, as it is often thought, particularly by the vainer sex, is a badge of genuine honor and royal patent of the man's energy and industry.

Witness the noble example set Republicans by the head of the most illustrious empire in the world, and consider how wise a Queen and mother may be, while her love for her family is not excelled by that of any other true and devoted mother. She realizes the necessity and value of sound health, if long and useful lives are to be attained. We see her sons doing duty for years in the ranks of the common sailor and soldier, enduring the privations and hardships incident to such service, and they thus secure not only health, but an insight into human life and thought and nature more valuable than any of the lessons learned from books.

All excesses in labor are to be reprehended, and not uncommon is it that we hear of health ruined and even life jeopardized by some foolish or thoughtless effort. Young men ought to guard against strife in labor, which usually accompanies

an ambition to excel. We know of an instance where a company of boys, by lifting against each other, one was ruptured. And again, an "itinerant" came along with a machine known as a lung-tester; one fair-haired, slender youth, having fears he would fall below the average, made so great an effort as seriously to impair his health for the time. Another case of a boy, who was frequently into some daring scheme of house-climbing or leaping, sought the crest of a cliff, some thirty feet, and, to astonish his companions, essayed the feat of flying; and, though he flew well enough, the lighting proved too much, since, as he struck the ground, both his legs were broken short off. We cite these various instances, coming within the range of boys' sports, for the purpose of warning others from attempting excesses. Leaping, running, climbing, are well enough in their way, and may be practiced in perfect safety, as millions of boys have practiced them with no detriment, but absolute advantage. Care should be exercised, and counsel given, to beware of the danger of going to extremes. The race over the meadows for the cows; hoeing in the garden or field; sawing or cutting wood for the fire; riding the horse to mill; a walk to the village post-office; holding plow; raking hay; the most of which are charming things to do, and just what boys should do to become strong and capable men.

The renowned of any age usually come from

humble life, in which character, both physical and mental, has had opportunity for development. Washington was a farmer's boy; so were Adams, Jefferson, Putnam, Jackson, Webster, Clay, Douglas, Lincoln, and Raymond, of the past; and Grant, Sherman, Trumbull, Emerson, Bryant, Buckingham, and Greeley, of the present; while nine out of every ten of successful lives in any department of labor have come from the fields of country life.

Gymnasiums offer a very good substitute for outdoor exercise; and if practice in them is at all times controlled by a careful judgment, the result is undoubted benefit. Indeed, the lung power of an individual can be more rapidly enlarged here than elsewhere, since exercise is here adapted and may be directed solely to that end. However, one may not require for this purpose anything beyond a simple and inexpensive apparatus, consisting of a cross-bar and a pair of rings attached to some point above, with just room enough to swing the person clear of the floor.

SLEEP

is the "sweet restorer," and invisible physician, playing an important part in the restoration and maintenance of health. Without this daily dying, as we are constituted, there could be no daily living; and whatever promotes sound, natural, balmy slumber is beyond all price in the economy of life. Chief among these promptings to restful slumber are a clear

conscience, proper exercise, a suitable diet, and place. All but the latter have been considered. One-third of the whole time of life is spent in bed. Suppose an individual has attained the age of seventy-five years, twenty-five of this, on the average, have been passed in sleeping! How essential, then, it becomes to understand and to have every help which can be afforded, in securing the required rest our wearing frames demand.

The first requisite is an airy room, capable of constant ventilation, either by the windows, doors, or flues, or by all. Next, a comfortable bed, of almost any material, except cotton and feathers, though the latter might be indulged in during the severest season; but it is better to dispense with them *in toto*, and use instead a mattress of hair, husk, moss, or straw. These even should be frequently aired, but only upon bright sunny days, and occasionally changed altogether for new material. In place of heavy cotton counterpanes use woollen blankets at all seasons.

Consumptives, and invalids generally, should never sleep under the former, as they are unhealthful. All bed-clothing should be carefully dried before a fire ere it is used. Many a one can date their final cold and fatal cough from this neglect of otherwise thoughtful housewives. Never put your friend in the northwest bedroom if it has not been duly aired in summer, or warmed in winter. If this

is not done, it is almost manslaughter. That corner in our houses should be used for parlors, store-rooms, or anything, rather than for sleeping people in. We have had some experience in this matter and know how utterly defenseless people are when assigned one of these rooms where death dwells. An open attack with a bludgeon is preferable. Cold, fresh air is beneficial, but a *cold, fresh* bed isn't.

No one thing, perhaps, serves more to drive away sleep than cold feet. People ought not to go to bed with cold feet. Dry them by the fire, or rub them till warmth comes. To avoid cold feet wash them frequently in cold salt water, rub them thoroughly, and wear loose, thick boots or shoes. Brisk walking, or chafing them on a rough mat will tend to restore warmth. Stockings should be changed often, and when possible, in winter, placed by the fire to dry. There should always be some extra covering upon the bed over the lower extremities in cold weather; it gives, in various ways, additional comfort to the sleeper, and there is less need of covering for the body. An extra blanket over the foot-board, in our changeful climate, is a wise measure. All have at some time been awakened in the night by the increasing cold, which would prevent further sleeping if there were no remedy of this sort at hand. No more covering should be used, however, than seems judicious. Pernicious habits may be formed

in this respect, which should be corrected, though we are aware some natures are more delicate and sensitive to cold than others.

Many there are, who sleep with their heads covered; this is highly destructive to health, and cases of scrofula may be directly traced to this custom. The poisonous exhalations from the body, together with the constant exhaustion of the oxygen from breathing, renders this confined air foul to the last degree. "The custom of covering the faces of children with the bed-clothes," says the celebrated Florence Nightingale, "produces a large share of the cases of scrofula found among them."

Invalids afflicted with catarrhal troubles should be careful to sleep upon their sides with their faces as much downward as possible, and dispense with all proppings, except a small thin pillow, the end of which will serve to give the right inclination to the face. The reasons for this, in these cases, are so obvious that there is no need of their statement here. The side is, for that matter, the best attitude for the sleeper in all cases, as also is a very slight elevation of the head, since the flow of the blood is less obstructed.

The habit of throwing yourself down to rest during the day without extra covering, is a source of many colds. The invalids should remove their outer dress wholly and get into bed, and thus secure

not only immunity from possible colds, but a better circulation of the blood than they can have if this is not done.

Avoid the taking of colds in every way possible ; and to do this, watchfulness and care is needed. Never sit in a draught in either private or public assemblies ; no, not even if in church. There is no law of courtesy which requires any one to inflict suffering on themselves, or perhaps to endanger their lives, out of regard to numbskulled architects or incompetent "building committees."

If a cold is taken give it prompt attention, and "scotch" it in the bud if possible. As to treatment, all are apt to have some favorite method. Pursue any rational course in which you have most faith, only so that you remain in your room, eat little or nothing, and keep the system unobstructed.

Bathing should not be neglected, and cold water baths in summer are refreshing and should be frequently indulged ; but in winter, temper the water so as not to shock the system. This jumping into ice-cold water may do for persons in the highest health, perhaps, but the invalid will have nothing to do with this sort. When the sponge is used then cold water applied to one limb or section of the body will do very well, if followed by brisk rubbing. This should be done in the morning, while tepid baths, tempered that no shock be produced, ought

to be taken just before retiring, whether it be the sponge or full bath.

The invalid who is much debilitated should take all baths in a warm room, with an assistant, bathing one portion while the other is kept partially dressed.

There is always a small current of air moving over the floor, and to protect against this, keep the feet covered, and the first thing to be done on rising in the morning, or at any time, should be to dress your feet, otherwise, even if you do not take cold, cold feet will be apt to keep your company the entire day.

We may also add here, that if by any exposure the feet get wet, to prevent taking cold, they should be, on returning home, at once plunged into cold water, rubbed briskly, and dried before the fire.

Finally, pure air, thick shoes, warm clothing, a nourishing diet, liberal exercise, early to bed and early to rise, with a rigid regularity of habit, and the abolition of fashion in the things specified, and many who are now invalids may live long and be comparatively happy. But, indulge in corsets, thin shoes, irregular hours, and live in damp and unventilated houses, eating fine-bolted, hot breads, with liberal supplies of pie and pound-cake, and it will not be long ere the undertaker will be cultivating your acquaintance.

Beware of this advancement on his part. It bodes no good to you. He has an eye to business. If not the pale-horse, he is its rider. Take another direction quickly, and give him a cold shoulder, but see that he does not get two.

CHAPTER X.

WHERE TO GO AND WHAT TO SEE AND EXPECT.

The best localities for invalids and others.—The city of Minneapolis.—Its drives and objects of interest.—Cascade and Bridal Falls.—Fort Snelling.—Minnehaha Falls.—The city and Falls of St. Anthony.—Anoka and St. Cloud.—Fishing and hunting.—Wilmar and Litchfield.—Lake Minnetonka.—Experience in fishing.—Some “big fish.”—White Bear Lake.—The Minnesota Valley.—Le Sueur.—St. Peter’s and Mankato.—Minneopa Falls.—Southwestern Minnesota.—Its agricultural wealth and capabilities.—Northern Pacific Railroad and its branches.—The Red River country.—Trade with Manitoba.—Western life and habits.

It is essential for the invalid, before undertaking a journey to Minnesota, to know the best points, both as regards matters of accommodation and of location. For there is, even in this State, considerable choice for patients; while for tourists, any point offering attractions is the place for them. We shall briefly consider the whole subject, but first with regard to the former class.

The city of St. Paul, an account of which has been previously given, is the most natural place to make the first stop; and it is a bright, cheerful, busy city in which to while away the time. Its location is

healthful, as well as beautiful, and invalids may remain there with perhaps as great advantage as at any point in the State, especially in the winter season.

MINNEAPOLIS,

situated on the west bank of the Mississippi River, opposite the Falls of St. Anthony, and less than an hour's ride by rail from St. Paul,—with a direct line to Milwaukee,—enjoys, at present, the widest celebrity among invalids as a place of resort. This town is on a nearly level plain adjoining the Mississippi River at the Falls of St. Anthony, and possesses a population of thirteen thousand. It is perhaps, *par excellence*, the most wide-awake and flourishing city in the State; and, while not over a dozen years of age, exhibits, in the elegance and cost of its private dwellings, its spacious stores, its first-class and well-kept hotel, the Nicollet House, its huge factories and thundering machinery—driven by that more than Titanic power of the great and wondrous Falls,—evidence of a solid prosperity.

Scores of invalids may be found in this town at the hotels and various private boarding-houses, of which there are quite a number.

Many visiting the State for health, leave without that improvement they should have obtained, owing to irregular habits and indulgences, which are directly traceable to their associations, rather than to any objectionable habits they may possess. The

temptation, when time hangs heavy on their hands, to join in billiards, euchre, and tea-parties, keeping the mind unduly excited and leading to late hours, is fatal to every benefit derived from the climate. If friends can accompany the invalid, giving society and controlling their life and habits, they thereby insure against these liabilities to a very great extent.

There is much in the vicinity of Minneapolis to interest the visitor. Days may be spent in examining the Falls of St. Anthony, which roar and surge along the rapids, impressing one with an appalling sense of their mighty power.

The suspension bridge, connecting the city with that of St. Anthony on the east bank of the river, is an interesting object. It was erected several years since at an expense of over half a hundred thousand dollars, and is the only bridge of its class on the whole river.

Take the towns of St. Paul and Minneapolis, together with the intervening country, and perhaps no portion of the Union east of the Rocky Mountains, presents so many objects of interest as does this particular region. St. Paul is itself a noble town, and the prospect from its highest elevations quite entertaining; while at the latter city the Falls of St. Anthony are "a sight to behold," and make up what the town lacks in striking scenery.

The country between the two cities is as pleasing in general outline as any to be found. Of course,

it lacks that romantic element so characteristic of New England, yet its general character is more rolling than that of most of the prairie country found in the West.

A drive from either city is "the thing" for the visitor to do. From Minneapolis one of the most charming drives in the world, for its length, can be had. Passing over the suspension bridge to the east side of the river, and down by it to the Silver Cascade and Bridal-veil Falls, which charm from their exquisite beauty, then on to the junction of the Mississippi and Minnesota Rivers at Fort Snelling, and across by the rope-ferry under the tall battlements of the frowning fort, whose edge is on a line with the towering, perpendicular bluff two hundred feet above your head, round by the road and up to the plain above, and into the inclosure of this old-time fortification, where, leaving your carriage, you proceed to the round tower, or look out of the fort, and on the very pinnacle of both cliff and battlement you may gaze out and over a spectacle more grand and beautiful than anything we know short of the White Hills. Away to the right stretches the valley of the Minnesota River, while before you the "Father of Waters" receives into his embraces the waters of the Minnesota, then, sweeping to the left, rolls slowly and majestically from view behind the companion bluffs of the eastern shore.

Here, from this crowning tower has floated—for

more than half a century—the “star-spangled banner” of our country, giving to the early settler an assurance of protection; proclaiming equality and freedom to all peoples who come hither in search of new homes, and to each and all a sense of increased dignity and importance as they stand underneath its ample folds.

A short distance across the open prairie and up the river toward Minneapolis—on the return—is the famed

MINNEHAHA FALLS.

Longfellow’s exquisite picture—in words—of these falls seems so perfect and complete that we cannot forbear to quote it. He says :

“ Sweet Minne-ha-ha like a child at play,
Comes gaily dancing o’er her pebbly way,
’Till reaching with surprise the rocky ledge,
With gleeful laugh bounds from its crested edge.”

And what can we say of them that shall be new or of fresh interest either to those who have read of, or what is better, have seen them? After viewing and listening to their laughing-leap we easily understand the fitness of the name they bear—the “Laughing Waters.”

The first sight of the falls is captivating, and there seems little of praise which you could wish to withhold. They are the very antipodes of those of Niagara—instead of volume and power inspiring awe, they win your love and enhance your views of the beautiful and good.

The waters

“Flash and gleam among the oak trees,
Laugh and leap into the valley,”

and move gaily and gleefully among the maples, oaks, and vines which line and wreath its banks; rivalling in song the wild birds that linger in the cool shadows of the embowering trees.

Minnehaha Creek has its rise in Lake Minnetonka, a dozen miles or more distant, where it is quite a diminutive little brook; from thence runs to and through Lakes Calhoun and Harriet, meandering along the surface of the country, till it makes its graceful leap at the falls to the chasm, some forty feet below, then empties into the Mississippi about half-a-mile distant to the eastward. The width of the stream and falls does not much exceed twenty feet.

We lingered long, and reluctantly turned our feet away from this enchanting scene where both real and imaginary heroes and heroines have dwelt, and in the bright waters of which their picturesque encampments have been often mirrored.

St. Anthony—opposite Minneapolis—is one of the oldest towns in the State, and was, in *ante bellum* times, quite a fashionable resort for the Southerners. The war ended that, while the latter city gave to it its final *coup de grâce*, and soon after the business set to the west bank of the river.

Its chief object of interest is the State University,

which has but just entered upon its career of usefulness.

Tourists will enjoy a few days in and around Minneapolis. It is the centre of a number of attractive objects of natural curiosity. A drive to Lake Calhoun and a day's sport in fishing is both practicable and pleasant.

We cannot regard the City of St. Anthony as equalling Minneapolis as a place of residence in point of health. Even in the latter city it is important that a home be had as remote from the neighborhood of the Falls as is convenient. Its adaptability to the needs of the invalid consists more in the walks and drives, the ample boarding-house and hotel accommodations, good markets, and cheerful, pleasant society, than in the particular location of the town itself or in the character of the soil on which it is built.

Beyond, and on the line of the St. Paul and Pacific *Branch* Railroad—now owned and operated by the Northren Pacific Railroad—the towns of Anoka and St. Cloud, both on the banks of the “great river,” are either more desirable for invalids than most other points in the State within our knowledge, so far as *location* is concerned. They are high and dry above the river, and possess a soil in and around them of a loose sandy character, for the most part every way favorable to good drainage and dryness. The towns themselves are quite small,

yet accommodations might be found for a large number in the aggregate. The hotels offer no special temptation to guests beyond those of the ordinary private family in the way of home comforts and conveniences. The people are kind, intelligent, and obliging to strangers; as, indeed, they are elsewhere in the State. Yet there is always a more hearty and cordial salutation among the inhabitants of towns who are anxious to secure good reputations and thereby enlarge their borders.

There is some hunting and fishing near both of these places, as, indeed, there is at most all points in the interior.

Near St. Cloud are Pleasant, Grand, Briggs, and Rice's Lakes, where fishing and rowing may be had, while the country eastward of the town affords fair hunting.

It is quite an advantage to any place, from an invalid standpoint, that the surrounding country affords them abundant means whereby the mind may be occupied and kept from crooning over the memories of loved ones far away, or brooding upon their own misfortunes.

On the St. Paul and Pacific *Main Line*—also controlled and owned by the Northern Pacific Road—are a number of attractive and healthful places, where ample accommodations may be had for the invalid, and where those who come to construct new homes will find cheap lands and good society.

The chief points are, after passing Minneapolis, Lake Minnetonka, Dassel, Smith Lake, Litchfield, and Wilmar. At the latter place there is a very pretty lake close to the village, with numerous others within a circuit of ten miles, and all are well stocked with fish; and in the spring and fall wild-fowl—ducks, geese, swans, and all our migrating birds, frequent them in great numbers. Moose are occasionally seen a few miles west of the town,—between it and the Chippewa River in considerable droves. There is a very nice hotel at this point, kept by an obliging host.

At Litchfield, good society and a somewhat larger village is encountered, but with less of sporting and outdoor amusements. Near this place resides the invalid son of Senator Howard of Michigan. He came to the State a confirmed consumptive, having hemorrhages and in that state of “general debility” incident to this disease, but is now in good health, the result of the climate and out-of-door exercise in which he has freely indulged, having taken a farm and rolled up his sleeves, determined to save himself—as he has.

It cannot be expected that a brief sojourn in this State will work any marvellous cure. Herein lies one of the principal difficulties. A patient comes to Minnesota, and, having heard much of its power to restore the enfeebled, expects to become strong and well within a few days. They should disabuse their

minds of this error before they start from home. The process of restoration with the consumptive is slow, as a rule, though some recover, it is true, very rapidly, yet with the most a year is as little time as can reasonably be expected for climate and exercise to complete a cure. It is better, if the climate is found to agree, to make the State a permanent home. A return to the old climate and occupation in which the disease originated is only to court its reappearance.

Lake Minnetonka, the place first above mentioned, is, however, *the* point for both pleasure-seekers and invalids who are well enough to "rough it." An hour's ride from St. Paul brings you to this, the most lovely of all the lakes in the State, to our thinking. It is really a series of lakes, all bounded by irregular shores; while, in places, occur deep bays and inlets, giving picturesqueness and beauty beyond all ordinary fancyings.

Near the railway station are two hotels (the furthest being the best), where good fare, and at reasonable rates, can be had, with row-boats thrown in, *ad libitum*. This lake is one of the pleasure resorts for the people of both St. Paul and Minneapolis. Excursion tickets are sold for every train running thither, and many go up simply to enjoy a day's fishing and sailing.

There is a little steamer running from near the railway station, which is close to the edge of the

lake, to the village of Excelsior, six miles distant, near which lives one of the best guides to the fishing grounds of the lake. But a guide is not at all essential to the amateur, or those in simple quest of fun, pleasure, or health, since the fish here are so plentiful that all will have luck, whether they have experience or not.

Near "Round Island," and off "Spirit Knob," in this lake, are favorite haunts of the fish, yet the "big ones" are not plentiful now at these points, though their resorts are well known to most of the old fishermen.

To tell of the size and abundance of the fish here will, perhaps, court disbelief; yet we state "what we know," when we say that a single fisherman starting, with the "guide" before referred to, at eight o'clock in the morning, came to the wharf at noon—after rowing a distance of six miles to make port—with a catch of about one hundred weight of fish, chiefly pickerel, one of which weighed twelve pounds, and measured near three feet in length. Another and less successful party of two, instead of catching a "big one," came near being caught by him. It was a funny incident altogether. They were from "down east," where pickerel don't weigh over a pound or so, on the average, unless fed on *shot* after being hauled in, all out of pure regard for the hungry and worried creatures, of course. Well, this party, all enthusiastic and eager,

cast the line, when, lo ! a monster pickerel gobbled the bait and away he went, carrying the floats under and the fisherman over and into the watery deep, with his heel and head just above water level only. The fish, including the "odd one," were subsequently pulled in by the man in the boat who is accustomed to "takes."

Boarding can be had, at the hotels and private houses in the vicinity of the lake, at from seven to ten dollars per week. For the summer season, country life should by all means be the rule. In the inclement portions of the year the towns are most desirable; St. Paul and Minneapolis taking the lead as places of resort, and they are, at these seasons, the most desirable.

In the vicinity of St. Paul there are a number of lakes. The nearest, Lake Como, is a pretty sheet of water, and affords one of the fashionable drives out of the city. It is intended, we believe, in the near future, by the authorities of St. Paul, to incorporate it, with several hundred acres, into a grand park and pleasure-grounds. It should be done.

White Bear Lake, a dozen miles out on the Lake Superior and M. Railroad, is a favorite place with all classes. Its shores are thickly wooded and the fishing rivals that of Minnetonka. There are a score of boats anchored on the shore of this lake awaiting visitors; and the two hotels provide for the needful rest and comfort of guests. This point

is second in interest only to that of Minnetonka Lake for both invalids and pleasure-seekers during the summer and fall months.

Up the Minnesota valley, while it is the most attractive in scenery and most fertile in crops, is not quite as desirable for the invalid as the places already named. Though Shakopee, Le Sueur, St. Peter's, and Madelia are not very objectionable in a sanitary point of view.

Still the valley is sloping, and its villages and towns are, for the most part, situated on the low lands, and cannot have as dry or desirable an atmosphere for patients as some other places. Yet the exceptions noted above are, perhaps, above the average in health so far as location is concerned. If, however, any invalid has relatives or friends living in the State and can find a home among them, then, even if the location was not as good as other points, this would be counterbalanced by other advantages such as come from being among them.

The principle town of this valley is Mankato. This is destined to outstrip many of those places which at present outrank it. It must become the most important railroad centre in the State outside of the capital. Situate in the very heart of the most fertile district, and possessing a population both industrious and enterprising, its future is bright and promising to a high degree. Its location is unfavorable for invalids, and should, as a rule, be

avoided by them. Fogs occur here, and the place is low, and soil too rich, and of a generally too wet character to insure the highest health to delicate and enfeebled visitors.

The Falls of Minneopa are near here and are worth a visit from the tourist. Some esteem them as excelling in attractiveness any and all others in the State.

The prairies beyond Mankato, along the St. Paul and Sioux City Railway, afford the best "chicken" shooting that we know of, and much of the hunting for this game is done along the line of this road.

The southeastern section of the State, in which are situated Rochester, Owatonna, and Austin, and other budding cities, is, at present, with the valley of the Minnesota, the great wheat-growing region. But it is not alone in the cultivation of serials that the farmers may become "fore-handed." The climate is favorable to nearly all of the products of the middle and northern portions of the Union, with some kinds of fruit excepted. Indeed, we found growing in the garden of Horace Thompson, in St. Paul, the southern cotton-plant, which (while the seed had not been planted by ten days as early as it might have been in the spring) was in bloom in August, and by September it had begun to boll, and another fortnight would have easily matured portions of the same. This illustrates in a general way the length and power of the growing

season in this State. The climate, so far as crops are concerned, is perhaps a counterpart of New England.

Here, in this southeast section, are the handsome homes and well-filled barns of an industrious and thrifty people. The traveller through this beautiful portion of the State can scarce keep from breaking one of the ten commandments as he witnesses a people so well to do and so happy in the possession of their productive acres.

Here, all immigrants may, by following out to the terminus of the penetrating railways, find cheap and good lands awaiting them, and where just as beautiful homes may be made as in that portion nearer the river—now teeming with life and industries—but which, a few brief years since, was as desolate and untenanted as are the unbroken prairies to the westward. The prices vary, according to location and character, from five to fifteen dollars per acre, though a majority of the wild lands can be had at from six to eight dollars. The “St. Paul and Sioux City Road” have thousands of acres along their line which they are ready and anxious to dispose of to settlers. The value of these lands is usually doubled the moment they are broken and occupied even with but inferior buildings—only so that shelter is obtained. For “new comers,” wishing new lands, this road and that of the “St. Paul and Pacific Main Line Railway,” at Wilmar, and on to the fertile

valley of the Red River, afford, in our judgment, the best lands. This latter road, now that it is under the control of the Northern Pacific Railway Company, is destined to play an important part in the settlement and development of that vast region—so rich in agricultural wealth—lying along the Red, Saskatchewan, and Assiniboine Rivers. It must indeed prove the link which some day, in the near future, will bind the new province of Manitoba and the adjacent country to the northwest of it.

It is, indeed, the intention of the Northern Pacific Road to construct from the point of junction of the St. Paul and Duluth arms, on the Red River, a branch road, northward to Pembina, and it cannot be long ere it will be continued to Hudson's Bay.

The trade and travel between British America and the States, overland from the present terminal points of the arms from St. Paul of the N. P. R., is quite considerable, giving constant employment, during the summer and fall, to about one thousand ox-teams. Goods from all parts of Europe and the States are obliged for the most part to take this route. The distance overland is about four hundred and fifty miles. It is a singular and picturesque sight to witness one of these trains, whether coming in or departing. They sometimes number a hundred teams, though oftener much less. They are all single ox-teams, the vehicles being two-wheeled. A convenient sort of harness is used on the oxen, not

unlike, in style, that on our truck horses. One driver—a half-breed usually—manages a half-dozen teams by tying the heads of the five to the rear of each cart and then leading the sixth or foremost team by means of a raw-hide rope attached to the animal's head. One thousand pounds constitutes a load for a strong ox. Thus stoves, flour, implements of agriculture, bales of goods, and even boxes of choice wines from France, marked "For the Bishop of Prince Rupert's Land, viâ St. Paul, U. S. A." Either the body of the church or that of the bishop must be large, judging from the quantity of these wet goods which we saw moving to the frontier.

There is a freshness in Western life that charms one, especially at the first. New scenes, new faces, new customs, new methods of speech, combine to give a delight to this experience of novelty. There is a mental exhilaration that tones the mind to a high pitch of enthusiasm and rich enjoyment, just as there is a marvellous quality in the air to brace the system and strengthen the nervous centres. Who that has gone through this double process of acclimation, as one might call it, does not retain a good impression of their experience in memory, and likewise in physique?

The dialect of the West differs from that of the East in many of the non-essentials, yet, perhaps, enough of variance is observed to make it noticeable and altogether piquant to the wide-awake Yankee,

who, in turn, balances the Western "reckoning" by his unique "kalkilations." But neither are as absurd as the Cockney, who gets off his ridiculous nonsense, as, for example, the following: "Ho Lord, help us to take hold of the horns of the haltar," etc.

The observant mind can, by keeping eyes and ears open, extract much of information and amusement when travelling anywhere—especially through the West—where vigorous thought and action are at all times encountered.

CHAPTER XI.

DULUTH.

Its location and rapid growth.—Who named for.—Enterprise of its people.—Its fine harbor.—Duluth Bay.—The steamship connection with eastern cities.—Pleasure travel up the lakes.—The Lake Superior and Mississippi Railroad.—The shortest route East for grain.—Public improvements.—The fishing, lumber, and mining interests.

AWAY at the head of our lake system stands a most marvellous illustration of the rapid growth, in population and power, of the American people.

It is less than ten years since the nearly impenetrable forest was levelled to make way for the infant city of Duluth, which, under the inspiring hand of genius and capital, has grown to the importance of chartered rights and privileges more quickly than any other city with which we are familiar.

It is situated on the immediate shore of the lake, and across the shoulder of what is known as Minnesota Point,—a long scythe-shaped sand-bar, six miles in length, caused by the action of the waves, separating the waters of Duluth Bay from those of

the lake,—and extending along the shore of said Duluth Bay.

From the lake back to the top of the bluff, a mile distant, the ascent is easy and regular, affording one of the loveliest sites for the foundation of a great and beautiful city.

Duluth was named for Daniel Greyson Duluth, a native of France, who was the first white man to explore the head-waters of Lake Superior. He landed here in 1679, and advanced far into the interior, westward, toward the Mississippi, cultivating friendly relations with the tribes inhabiting this portion of the country. From his time to the present little or nothing has been done toward the founding, at this point, of a place suitable to the great possibilities of trade and commerce. Thus the spell which seemed to shut from view this key-point of a vast interior country remained till the prophetic eye of capital discovered and possessed it.

That this wilderness, heretofore so wrapt in mystery, should now blossom into life, seems quite plain to the commonest observer of us all.

How faith is given us when success walks hand-in-hand with enterprise.

Though the city of Duluth is only ten years old, it boasts a population of over three thousand, with many of the conveniences of older settlements. Its streets are laid out with great regularity, and the principal one, next the lake, full a mile in length, is

lined along nearly its whole extent with stores and warehouses of every kind and description. The sound of the hammer and saw may be heard on every side.

Buildings so crowd upon the forest that the woodman is hard pressed to clear the way; and thus the brave work goes on of transforming this wilderness into gardens where roses in their season bloom abundantly.

We counted not less than five handsome churches, all erected the past year, representing as many different denominations, and, in point of style and interior finish, quite up to the requirements of the most enlightened taste. Two convenient and comfortable hotels give rest and refreshment. Ample provision is being made for public schools; and the projectors of the town have, in their wisdom, set apart one entire square on which a ladies' seminary is to be erected; in short, everything is being done in a most determined and energetic manner. There is no place for idlers here. Such a wide-awake community naturally weeds itself of them; and, consequently, the society is industrious and moral, if not always elegant and pretentious.

Duluth will in time possess a completely landlocked harbor, and indeed has it already, but not at present as accessible as it will soon be made to the commerce seeking her wharves. The work of cutting a ship channel across the shoulder of the sand-

bar before referred to is in progress, the distance being but a few hundred feet of loose earth, which, when completed, will open communication to an immense bay, where all the commerce of the lakes might ride at anchor in perfect safety, were some slight dredging done to increase the present depth of water. This bay is now reached by a circuit of half-dozen miles around the end of this sand-bar, known as Minnesota Point. The Bay of Duluth must eventually, we think, be the great harbor, though a breakwater is in course of construction, which, when completed and made permanent, will give ample shelter to all immediate necessities. Costly wharves have been constructed on the lake side of the Point, and there vessels load and unload almost constantly.

Since it is the established policy of the government to improve the rivers and harbors of the country, surely the small needs of this place ought not to be overlooked. While private enterprise can and does do much, yet it is a sound theory for the general government, which derives its revenues from the people, to aid them in removing or building such obstructions or guards as the merits of the case and the public interest demand.

Already the trade and commerce of the town employs about a dozen steamships, and numerous sailing vessels are also kept in motion, transporting supplies for the great railway enterprise which has its eastern base at this point.

There are three lines of propellers plying between this port and Buffalo, Cleveland, and Detroit, each employing three ships, while there is an additional line to and from Chicago. They together average four arrivals weekly. The trip from Buffalo is performed in little less than a week, that being the most distant of the respective places. These steamers have accommodations for over half a hundred cabin passengers, as a rule, and both invalids and pleasure travellers will find this, in every respect, the most interesting and comfortable means of access to Minnesota during the summer season. Formerly many availed themselves of such facilities as there then was to make, during the summer, the grand tour of the lakes, but were obliged to return by the route they came. Now, however, the tourist is not compelled to turn back from the head of Lake Superior, as in former days, since the completion of the railway from Duluth to St. Paul, connecting the head of the great lakes with the navigable head of the great river, permits a sweep of travel through the interior of the continent such as is not enjoyed elsewhere on the globe, either in distance, interest, or variety. Each year must give added fame to this route.

Duluth is at the extreme western limit of all the great lakes of the interior, and must eventually become the commercial centre for the Northwest. It is already reaching out its arms to grasp the

trade and commerce of that region, which, once in its control, must ever remain tributary to it. The Lake Superior and Mississippi Railway—one hundred and fifty-four miles in length—above referred to, inaugurates a new era in the agricultural interests of the State, and opens an entirely new line of travel. By means of this road the products of Central and Southern Minnesota are placed three hundred miles nearer lake transportation eastward than heretofore, since the distance to Chicago—the present point of destination for these things—by rail is that much greater. This new outlet connects at St. Paul with all of the interior lines of railroad in the State, likewise with the navigation of the Mississippi, and on the completion of the St. Paul and Sioux City Road, will drain one of the most fertile valleys, in wealth of exports, to be found in any portion of the West.

The great staple of all this region of country is wheat, and the question of its rapid and cheap transportation is a most important one, both to the producer and consumer. Combinations have been formed in the past whereby the carriage and price was subject to the control of a few, to the great detriment of the producer; but this wheat oligarchy is now likely to receive its quietus in view of this new and competing outlet to eastern markets by way of Duluth.

The water transportation eastward from the lat-

ter city is at as low a rate as from Chicago, while the time is by a day in favor of Duluth, owing to the less favorable winds over Lake Michigan.

It is assumed by some that in view of the lower latitude of Chicago, the advantage of that city must ever remain pre-eminent, since the ice obstruction would be less, giving to commerce a much longer season than it could enjoy at any other of the great ports on either of the two westernmost lakes. This seems plausible at first view, but is hardly justified by actual facts. The difference, though slight, is not sufficient to hold any valid claim to a monopoly in the carrying trade of these inland seas. While the ice disappears earlier by a few days at Chicago than at Duluth, in consequence of its geographical position, it will be observed that the course of its lake commerce is due northward, and before that of the two rival lakes meet in the common waters of Huron, they must both pass through narrow and contiguous straits, in both of which the ice obstructions leave about the same time. Hence the advantages of the one port over that of the other, to the shipper, are not of any great moment, and are more than counterbalanced by the less time occupied in reaching the Lake Erie ports from Duluth, over that consumed by vessels from Chicago, growing out of the more favorable winds blowing over Superior, as before mentioned.

The advantage, then, by this new route to the

East (*viâ* Duluth for a portion of Northern Iowa and Southern and Central Minnesota) is a saving of the three hundred miles of extra rail transportation incurred by way of Lake Michigan; to say nothing of avoiding the exorbitant tolls and inexplicable delays of the latter route. The difference inhering to the benefit of the public, between the two routes, has been estimated, amounts to about one dollar per barrel in favor of this new outlet. If this can be proved true by practical experience, it must inevitably turn the golden stream of grain into the lap of Duluth, since destiny itself is not more certain than that the speediest and cheapest lines will do the world's marketing.

Anticipating the wants of this route, there has been erected at Duluth, during the past season, an immense elevator, with a present capacity of over a third of a million of bushels, which, with a small additional expenditure, can be increased to a half million. Its proximity to the docks and railway is such that grain can be taken from the cars upon one side, and loaded directly into vessels upon the other, or stored, as the case may be.

The elements of future prosperity surround this new city and lie at her very doors. The north shores of Superior are rich in iron, copper, and silver; while the southern already supply the markets of the Union with the most of its copper, which has grown from small beginnings (of twenty years ago)

to be one of the great interests in all our many valuable mining arts.

The fishing interest, which already gives employment to a great number of people, is in the first stages of development. They are now taken chiefly at the straits, but the business may be made extremely profitable at Duluth, since the head of the lake is their natural feeding-ground, and thousands swarm these waters. We all have eaten of the lake trout and white-fish, which may be had in the most of our cities and towns, and know how successfully they compete with the best of our salt-water article. It is already an important and growing trade, and highly profitable.

Each morning during our stay in Duluth the tables of the "Clark House" were served with both of these delicacies; and these fish certainly surpass, when taken fresh, any fish it was ever our fortune to eat. The cost of living is much cheapened in consequence of their abundance, and surely nothing more wholesome can be placed on the table.

If Duluth had but the one interest, that of lumber, its prosperity would be assured. It lies in the very heart of a vast district abounding in pine-forests, and which have scarcely been explored, and we believe much of it remains unsurveyed by the general government up to the present time. The St. Louis River, which empties into Duluth and Superior Bays, courses, with its branches, a thou-

sand miles among the dense forests of pine ; and yet this is but a fraction of the immense tract of valuable timber to the north and west of this young and flourishing city.

There is no lack of water-power to reduce the raw material to a marketable condition, since the river above named can turn all the wheels of every mill in the country, could they be planted beside it. The point of contact by the river with the outlying rim of the basin of the great lake is at the village of Thompson, some twenty miles distant from Duluth, on the St. Paul Railroad.* Here the waters of the St. Louis River struggle by and over this rim of rocks, downward and onward, roaring and surging in their tumultuous ways, to the level below. These rapids are known as the "Dalles of the St. Louis," and extend some four and a half miles in an elbow direction. If a canal were cut across this elbow, this splendid water-power could be utilized beyond that of any other in the country.

What a field for enterprise is presented to lumbermen ! A vast forest, a river furnishing transportation and unlimited power for manufacturing, and, finally, an open sea, with almost countless markets !

Besides this, there lies among the cliffs and high lands adjoining the rapids of this river inexhaustible quarries of slate, surpassing, we are informed,

* Known as the Lake Superior and Mississippi Railroad.

those of England in quality and quantity, and which must ere long receive that attention they seem to demand at the hands of capital.

The now rude village of Thompson—named for J. Edgar Thompson, of Philadelphia—with its half dozen extemporized buildings, in the quiet of the woods, will ere long resound with the hum of many industries, and already has considerable importance as being the point of junction of the two great railways entering Duluth—the St. Paul and the Puget Sound (Northern Pacific) Roads; the latter traversing a vast territory abounding in everything which contributes to the growth of an agricultural and manufacturing people.

The city of Duluth, seated at the eastern gate way of this new and splendid domain, holds in her golden horn the destinies of many populous and powerful States.

CHAPTER XII.

THE NORTHERN PACIFIC RAILROAD.

The Northwest.—Its great extent and character.—Jay Cooke, Esq.—
The Northern Pacific Railroad and its advantages.—The general
line of the road.—The shortest route to Asia.—The Red River
valley.—Puget Sound.—The future of our country.

THE vast reach of country lying between the Red River and the Cascade range of mountains possesses, to some extent, a climate little inferior in healthfulness to that of Minnesota itself. The same dry, westerly winds sweep over it, and are even more marked in their continental character. Invalids will undoubtedly find as great advantages arising from a residence there as in any other part of the Union, yet for the present there are no means of easy access to any portion of this immense district. By-and-by this will be changed.

The many natural curiosities abounding in this little-explored region would alone prove sufficient to attract thither great numbers of our people, but when the almost unparalleled attractions of the climate are added, the travel and immigration must eventually become enormous.

The Northern Pacific Railroad,—the power which is destined to transform these Territories into States,—is being pushed rapidly westward, with the promise of an early completion.

To the energy of Jay Cooke, of Philadelphia, the distinguished banker and philanthropist, will belong, perhaps, the chief honor of its completion. Not that this great enterprise might not be begun and carried to a triumphal close by others,—since the government subsidies would, in time, together with the demand for this additional highway across the continent, enlist men of resolute character and ample means,—yet, withal, every new and great undertaking has somewhere a correspondingly great spirit, impelling self and co-workers to the contest and achievement of the desired ends, and we recognize in this vast enterprise the hand of this indefatigable man. Of course the able and influential associates in the board of directors must share in the honor of this national work, and their names will go down in history as among the benefactors of the country in which they lived.*

How lightly we speak now of continental roads since one is a veritable fact. Novelties, to Americans, pass rapidly away.

* *Board of Directors.*—Messrs. J. Gregory Smith, R. D. Rice, Thomas H. Canfield, W. B. Ogden, William G. Morehead, W. G. Fargo, B. P. Cheney, Geo. W. Cass, Frederick Billings, William Windom, James Stinson, Samuel M. Felton, Charles B. Wright. *Trustees.*—Messrs. Jay Cooke and J. Edgar Thompson.

How few realized, in 1860, that the coming decade would witness the completion of one and the beginning of another iron road across the continent. Ah! those brief years brought revolution in many things. The social fabric of half the Union was not less overturned in this brief period than were the accustomed avenues along which ran the world's trade and commerce.

The Northern Pacific Railroad was chartered by Congress in 1864, and was approved by President Lincoln on the second of July of that year. It has no government aid beyond a right of way and cession of the public lands along its line; each alternate section for a width of twenty miles in the States and forty miles in the territories. This, as is estimated, will give, according to the survey of Gen. W. M. Roberts, about fifty millions of acres,* large portions of which are known to be very fertile, while much will lie in the rich mining districts of Montana Territory.

This generous donation of public lands by the people is well deserved by this second great national enterprise. It is the only method whereby the isolated and distant portions of the interior can become utilized. The value of the remaining lands of the government will become tenfold what the whole would be if left to time and private enter-

* The line, it is now judged, will give about sixty millions of acres.

prise for their development. The work was actively begun in 1870 on the Duluth end of this road; and it is expected that the present year (1871) will see it completed to the Red River, a distance of about two hundred and thirty-three miles from the above-named city. Quite a number of miles of iron had been laid at the time of our late visit, and as many more miles graded; with half a thousand men actively engaged in forwarding the vast undertaking.

The road is already completed to the Mississippi above Crow Wing, and from there will follow in nearly a straight line to Fort Abercrombie, the head of navigation on the Red River. Here it will unite with the St. Paul and Pacific Railroad (owned and operated by the Northern Pacific Railway, a branch of which it now is), already in running order half the distance from St. Paul. This line, with all its rights and franchises, has been recently purchased by the Northern Pacific, and will greatly aid in supporting the main trunk when completed.

In addition to the force on the eastern end of this road, there has been assembled at the Pacific terminus an able corps of engineers and contractors, who have already commenced the construction there, and thus the great road across the continent will be pushed to final completion, probably within five years from the first commencement of the undertaking.

The road, as located by Engineer Roberts in his

report, is laid from the head-waters of Lake Superior in a nearly due westerly line across the State of Minnesota to Red River, near Fort Abercrombie; thence "across the Dakota and Missouri Rivers to the valley of the Yellow Stone, and along that valley to Bozeman's Pass, through the Belt range of mountains; thence down the Gallatin Valley, crossing the Madison River, and over to the Jefferson Valley, and along that to the Deer Lodge Pass of the Rocky Mountains; thence along Clarke's Valley to Lake Pend d'Oreille, and from this lake across the Columbia plain to Lewis or Snake River; down that to its junction with the Columbia; along the Columbia to the Cowlitz, and over the portage to Puget Sound, along its southern extremity, to any part which may be selected."

A branch road is to follow the Columbia River to the vicinity of Portland, together with a link connecting the two western arms.

By this route, which may be materially departed from in the final location, the distance will swell to near two thousand miles between the two grand termini, and it is estimated will cost, with its equipments, from seventy-five to one hundred millions of dollars.

The route of this road is known to be more feasible than was that of the present line to California. Its elevations are much less, and the natural obstructions of the mountain ranges more easily sur-

mounted, while the climate invites, on account of its high sanitary character, both the immigrant and invalid.

The line from Omaha to California shows that for nine hundred miles the road has an average height above the sea of over five thousand feet, the lowest point in that stretch being over four thousand; while the corresponding distance, embracing the mountain ranges, along this Northern Pacific line, is near two thousand feet lower than the other, giving, in this difference in elevation, according to the usual estimate, over nine degrees advantage in temperature. This becomes important in an agricultural view, as well as in the immediate and constant benefit in the increased facility for operating a railway.

In addition, the curvature of the thermal lines of the continent bear away to the northward of the surveyed route of this great enterprise, insuring almost entire freedom from snow obstructions other than is common to any of the principal railway lines in the States themselves.

The extent of country tributary to this road is entirely unparalleled by that of any other. Along the present finished continental line an uninhabitable alkaline desert stands across and along its pathway for many miles, while the Northern line leaps from valley to valley, all more or less productive, and in which large supplies of coal and timber are found sufficient for ages to come.

Of this region, and the general line of this road, the Hon. Schuyler Colfax writes as follows:—

“Along the line of the Northern Pacific Railroad, as it follows up the water-courses, the Missouri and the Yellowstone on this side, and descends by the Valley of the Columbia on the other, a vast body of agricultural land is waiting for the plow, with a climate almost exactly the same as that of New York, except that, with less snow, cattle in the larger portion of it can subsist on the open range in winter. Here, if climate and fertility of soil produce their natural result, when railroad facilities open this now isolated region to settlement, will soon be seen waving grain-fields, and happy homes, and growing towns, while ultimately a cordon of prosperous States, teeming with population, and rich in industry and consequent wealth, will occupy that now undeveloped and almost inaccessible portion of our continental area.

“But this road is also fortunate in its pathway across the two ranges of mountains which tested so severely the Pacific Railroads built on the central line, and the overcoming of which reflected such well-deserved honor on their energetic builders. At the Deer Lodge Pass, in Montana, where it crosses the Rocky Mountains, its altitude above the sea is three thousand five hundred feet less than the Union Pacific Railroad at Sherman, which is said to be the highest point at which a locomotive can be found in

the world. And on the Pacific side of the continent it is even more fortunate. From Arizona up to the Arctic Circle the Columbia is the only river which has torn its way through that mighty range, the Andes of North America, which in California is known as the Sierras, but which in Oregon changes its name to the Cascades. Nature has thus provided a pathway for the Northern Pacific Road through these mountains, the scaling of which, on the other line, at an elevation of over seven thousand feet (a most wonderful triumph of engineering), cost the Central Pacific millions of dollars, and compelled them for seventy miles to maintain a grade of over one hundred feet to the mile—twice the maximum of the Northern Pacific at the most difficult points on its entire route.

“It is fortunate, also, in its terminus on the Pacific coast. No one who has not been there can realize the beauty of Puget’s Sound and its surroundings. One hundred miles long, but so full of inlets and straits that its navigable shore line measures one thousand seven hundred and sixty miles, dotted with lovely islets, with gigantic trees almost to the water’s edge, with safe anchorage everywhere, and stretching southward, without shoals or bars, from the Straits of Fuca to the capital and centre of Washington Territory, it will be a magnificent *entrepôt* for the commerce of that grandest ocean of the world, the Pacific.”

One of the chief districts to be opened to trade and commerce by the construction of this road is that known as Prince Rupert's Land, in British America. This region of country has been recently organized under the name of Manitoba, and embraces the rich and extensive valleys of the Red, Assiniboine, and Saskatchewan Rivers. A population of several thousands already inhabit this section, and a branch railway is to be constructed along the valley of the Red River from the point of crossing by the Northern Pacific Road, and under its immediate auspices. The influence on this people, whose interests will then be almost wholly identified with those of our own, cannot be doubtful. It requires no prophecy to determine their ultimate destiny. The time is not distant when all of British America must become "one and indivisible" with us, and the knell of parting government is likely to be sooner sounded in the region of the Red River than elsewhere along the line of our frontier.

An additional advantage inheres in this Northern Pacific line of prime importance, and that is in the fact of its offering to commerce a shorter route by several hundred miles to the Pacific coast than that which now exists. To Japan and China, from Puget Sound, is likewise, by more than half a thousand miles, less than from the port of San Francisco. This difference is sufficient to give, eventually, to this route the carrying trade of those countries.

Who can question the greatness and power which lies slumbering along the line of this royal road, through which, as through a great, pulsing artery, the life,—even now already dawning,—will soon throb with a force which shall vitalize this Territory, vast as an empire, and richer than the fabled realms of an Arabian tale.

CHAPTER XIII.

OTHER CLIMATES THAN MINNESOTA.

Sketches of other climates and localities favorable to invalids.—California.—Mortuary statistics of San Francisco.—The wet and dry seasons.—San Diego the best place.—Florida and its reputation.—Nassau as a resort.—Fayal and its climate,—English and American visitors.—Means of access.

OTHER climates and localities than Minnesota have for many years enjoyed more or less of a high reputation as healthful resorts for the consumptive, and while the chief purpose of this volume has been the consideration of the character and climate of our Northwest, yet it seems not inappropriate that some mention at least should be given to these other places, even though it be extremely brief. Beyond a general outlining of some of the prevailing characteristics appertaining to each locality, we do not deem it desirable or necessary to go, since all who contemplate journeys to any one of them will, of course, consult such writers as have considered in detail the various merits or demerits of the several climates.

Considerable attention has been called the last few years to the reputed healthfulness of the State of

CALIFORNIA.

The first years of its occupation by Americans very trifling consideration was given by any one to any data whereby the true character of the climate could be judged. It was a new experience altogether for people of the old States to encounter a region possessing many characteristics of a semi-tropical country in combination with those with which they were familiar in the latitude of their own homes. To see roses blooming in the gardens of San Francisco during the winter months, and experiencing in summer cool, restful nights, was quite calculated to call forth much of earnest and cordial compliment, whether any real virtue inhered in the climate of this particular locality or not. While this flattering state of things existed at San Francisco, back among the Sierras the poor miners had many and doubtful struggles in trying to ward off the severe and frequent storms which prevail throughout the long and tedious winters.

The peculiar geographical position of this State, in conjunction with its elevated mountain ranges, gives to it nearly every climate, from that of the equator up to the limit of the temperate zone; and while the atmosphere of one neighborhood is bland and delightful, that of another is quite disagreeable

and trying. No general character obtains for that of the whole State. The eastern sides of the mountains are everywhere more dry and elastic than are the western, and for tubercular cases are preferable to the sea-coast, though the vicinity of San Francisco would, for simple bronchial affections, be best,—yet we do not regard either of these points as specially desirable as places of resort.

An examination of the mortuary statistics of San Francisco for 1870, as given by the *Pacific Medical and Surgical Journal*, in the February number of this year, discloses an alarming percentage of deaths by consumption. For instance, the population of the city is one hundred and fifty thousand, while the deaths by consumption were five hundred for the year (round numbers), which gives one death to every three hundred inhabitants, being but a shade more favorable than is that of New England for this particular disease. Still this is not, perhaps, a fair test of the climate, since a number of the decedents are among those, probably, who came from other portions of the country seeking a restoration on this coast.

The general health, however, of San Francisco is shown to be, by the same authority, better than that of the average of large cities in the older States.

While the temperature in winter at San Francisco is maintained at a comparatively high point,—allowing the outdoor cultivation of some of the

hardier varieties of flowering shrubs,—the atmosphere, meanwhile, is damp and chilling, and extremely detrimental to most cases of lung difficulties.

The climate of California is, in the neighborhood of San Francisco, and northward, divided into two distinct seasons,—that of the wet and dry. The wet season begins usually in November, and terminates in May, while the dry season embraces the remaining portion of the year. Of course the length of either varies considerably, as do all our seasons everywhere in the temperate latitudes. The quantity of rain falling in this wet season equals that of the entire fall for New England,* and coming in the cooler portion of the year has just those demerits, to a considerable, though modified degree, which inhere in the climate of the Atlantic coast, of which we have spoken elsewhere in detail.

The southern portion of California, however, presents a radical dry climate, and is quite free from those wet and dry seasons which obtain in central and northern California. The amount of annual rain-fall is, in the region of

SAN DIEGO,

about ten inches, and while it is true that this precipitation is in sympathy with, and indeed is distributed over a portion of what is known as the “wet season,” in Upper California, yet it does not amount

* For exactness, see chapters on Climate.

to enough in quantity to establish a wet season. The balance of the year the air is dry and elastic, and highly favorable, so far as we are able to judge, to all cases of pulmonary troubles.

San Diego is an old Spanish town, and for many years has been neglected, and not till recently has it shown much signs of recuperation. But, now that some Yankee pioneers have settled in the town and neighborhood, its prospects brighten.

Fruits of all kinds, such as peaches, oranges, figs, and plums flourish in the neighborhood, and in time must form one of the chief articles of commerce. Few places offer so good an opportunity for stock-grazing as does this fertile region.

This old city is, ere long, to become the terminus of one of our great continental lines of railway, namely, the Southern Pacific.

Access is had, at the present time, either overland from San Jose, or by a monthly steamer from San Francisco, the distance being, by water, over three hundred and fifty miles.

FLORIDA

is certainly the only State among all of those lying east of the Mississippi River to which invalids may resort with advantage, so far as the climate is concerned. There are points in others of the Southern States, such as Aikin, where two years out of three, perhaps, consumptives, in certain stages, may go with benefit; yet there is no Atlantic or Gulf State

with a climate and soil adapted to aid in the cure of bronchial and catarrh troubles and nervous prostration at all comparable to Florida in the winter season.

In cases of lung difficulties, where tubercles have begun to form, such would find a cool, dry, elastic air best, except when the disease has been induced by some mental or emotional shock: such are benefitted most by a mild, sunny atmosphere, since the depressed spirits are, under these favoring circumstances, more easily rallied.

The St. John River is the section most visited, together with St. Augustine, on the Atlantic sea-coast; yet so soon as Tampa Bay and Key West possess accommodations, they will be found more favorable, since the equability is somewhat greater.*

There are several islands in the Atlantic Ocean to the south and eastward of us which have become somewhat celebrated as places of temporary residence for the consumptive.

That of

NASSAU (N. P.),

the nearest to our coast, has some claims upon our attention. The temperature does not greatly vary from that of Southern Florida, except that it may have a shade more of equability.

The island of New Providence, of which Nassau

* For particulars relating to Florida, see *A Winter in Florida*, published by Wood & Holbrook, New York.

is the capital, is one of the group constituting the Bahama Islands, lying directly east of the Florida coast, and about three hundred and fifty miles distant from it. The town is regularly and well built, and during our "late unpleasantness" was the principal rendezvous of the scores of blockade-runners. Since the war the place has resumed its calm and peaceful habits, and is again frequented, during the winter, by many invalids from the North and others who seek a temporary home in a genial clime.

San Domingo, should it be annexed, will probably become a place of resort for many people, but at present, while its climate in winter is charming, and the country in the vicinity of Samana Bay beautiful, yet its accommodations are wretched, and likely to remain so for some time to come.

The benefits arising from the climate of these two islands is practically the same as in Florida, while the accommodations are not as extensive, though in Nassau are quite acceptable, though limited. Regular communication is had by steamer to and from New York once each month.

FAYAL,

two thousand miles eastward and near the coast of Spain, is little known to the American public, yet it has held a high character among the Europeans for several generations in the matter of its climate. This island forms one of the Azorean group, and possesses the finest harbor of them all. Horta, its

capital, is located at the head of this harbor, and is quite a handsome town, situated on the southeastern side of the island.

The climate is mild, and, to a high degree, healthful; and invalids derive great benefit from a residence there. England is the most largely represented among them, though a few Americans are nearly always to be found, chiefly from Boston and vicinity, from which place occasional sailing-packets may be had to the island, though the most direct route is by way of England, whence the steamers of the West India Mail Company call regularly at Horta.

The island is of volcanic origin, and its principal elevation is some three thousand feet, while the remaining portion is of a somewhat rugged character, though of the twenty-seven thousand five hundred and twenty acres comprising it, about one-half is under cultivation, and much of this is extremely fertile. The chief products are wheat, corn, potatoes; while wine and oranges are raised in large quantities for exportation.

In former times, when the whaling interest of the country was in a flourishing condition, between one and two hundred whale-ships touched, in their outward passage, at this island; and even now many American vessels call here for water and supplies.

Some years ago, shortly after the conclusion of the trial of Dr. Webster, his wife and daughters

visited Fayal, where they remained some considerable time, and where they doubtless hoped to and did for a while escape from all obtrusive notice and observation. However, they were soon known, and the sympathies of the people of Horta were much enlisted in their behalf. The daughters were highly cultivated and quite beautiful, and attracted considerable attention, out of sympathy at their distressed situation.

Visitors will find at Horta very comfortable accommodations, and the many curious and interesting features peculiar to the island and its people will serve to interest and instruct them while they remain.

Nearer home, the

ADIRONDACK

region has been greatly extolled by many as possessing a highly salubrious climate for consumptives, and indeed for all who are suffering from general debility and over-work.

There is no doubt that a trip to this mountain region of northern New York, during the latter part of the summer and early fall, would prove of great benefit to many invalids, as indeed a rough camp-life would prove in any high and dry section, especially of interior and northern Vermont, or New Hampshire, which lie contiguous to the Adirondack country.

There is, however, an advantage in a district in

which pine timber abounds, and all who resolve on camping out for health should not fail to select such localities. There is a subtle and positive balm to weak nerves and sore lungs inhering in the atmosphere of pine forests, wholly unknown to that of any other. Invalids should be very cautious about giving too much credence to the benefit to be derived by a residence in any climate. They are apt to expect too much, and the fault is perhaps more theirs than those who extoll various localities, in that they build, unjustifiably, too great expectations on what they hear or read.

Scores of people go each season into the Adirondacks with impaired health, and after a few weeks of roughing it come out immensely improved, both in health and spirit, while, on the other hand, others go who are too feeble for such a journey ; and again, others who know nothing how to take care of themselves, whether in the woods or out, and, of course, such must return in disappointment.

TABLE OF DISTANCES,

[Approximately Determined.]

From DUBUQUE, or DUNLEITH, to ST. PAUL, by river:

To	Cassville.....	33	33
"	Guttenburg.....	10	43
"	Clayton.....	12	55
"	McGregor.....	11	66
"	Prairie du Chien.....	4	70
"	Lynxville.....	24	94
"	La Fayette.....	13	107
"	Lansing.....	3	110
"	De Soto.....	6	116
"	Victory.....	10	126
"	Bad Axe.....	10	136
"	Warners.....	6	142
"	Brownsville.....	10	152
"	La Crosse.....	12	164
"	Richmond.....	19	183
"	Trempeleau.....	4	187
"	Homer.....	8	195
"	Winona.....	9	204
"	Fountain City.....	12	216
"	Minneiska.....	18	234
"	Buffalo City.....	7	241
"	Alma.....	7	248
"	Wabasha.....	10	258
"	Reed's Landing.....	6	264
"	North Pepin.....	8	272
"	Lake City.....	7	279
"	Florence.....	5	284
"	Frontenac.....	6	290
"	Waconta.....	12	302
"	Red Wing.....	6	308
"	Drummond Bluff.....	15	323
"	Prescott.....	13	336
"	Hastings.....	4	340
"	Pine Bend.....	16	356
"	ST. PAUL.....	16	372

TABLE OF DISTANCES.—CONTINUED.

From ST. PAUL to DULUTH.

To	White Bear Lake.....	12	12
"	Forest Lake.....	13	25
"	Rush City.....	29	54
"	Kettle River.....	40	94
"	Moose Lake	19	113
"	Thompson.. ..	19	132
"	Fond du Lac.....	9	141
"	Oneota	9	150
"	DULUTH.....	4	154

From ST. PAUL to ST. CLOUD.

To	St. Anthony.....	10	10
"	Anoka	18	28
"	Itasca	7	35
"	Elk River	5	40
"	ST. CLOUD.....	34	74

From ST. PAUL to WILMAR.

To	St. Anthony.....	10	10
"	Minneapolis	—	10
"	Cedar Lake	4	14
"	Minnetonka City.....	6	20
"	Wayzata	4	24
"	Delano.....	15	39
"	Dassel.....	27	66
"	Litchfield.....	10	76
"	WILMAR	28	104

From ST. PAUL to MANKATO.

To	Mendota	6	6
"	Shakopee.....	22	28
"	Belle Plain.....	19	47
"	Blakely	5	52
"	Le Sueur.....	11	63
"	St. Peter	12	75
"	MANKATO	11	86

From WINONA to ST. PETER.

To	St. Charles.....	28	28
"	Rochester	22	50
"	Owatonna.....	47	97
"	ST. PETER.....	53	150

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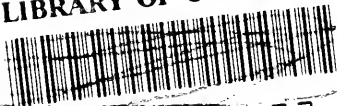


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